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IT BEARS REPEATING: the effects of immediate repetition on learners' L2 performance in a poster carrousel task

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#### **RESUMO**

É VÁLIDO REPETIR: Os efeitos da repetição imediata na performance de aprendizes de L2 numa tarefa de apresentação de pôsteres

#### Fabrício Mateus Coêlho

Orientadora: Profa. Dra. Raquel Carolina de Souza Ferraz D'Ely

O presente estudo visa aferir os efeitos da repetição imediata de tarefas sobre a proficiência de aprendizes de inglês como segunda língua no que tange à complexidade, acurácia e fluência (dimensões de proficiência em L2). Buscando uma reprodução parcial do experimento conduzido por Lynch and Maclean (2001) a tarefa empregada neste, para a elicitação de dados de discurso oral foi o *carrossel de pôsteres*. 14 estudantes de nível intermediário matriculados na disciplina *Compreensão e Produção de inglês oral - V* do programa de Letras Inglês da Universidade Federal de Santa Catarina repetiram turnos de apresentação de pôsteres numa maneira semelhante à de um simpósio.

Os resultados da ANOVA de medidas repetidas indicaram efeitos estatisticamente relevantes em apenas uma das 8 medidas de proficiências empregadas: fluência medida como discurso livre de autocorreções e repetições, (parcimoniosamente) indicando a possibilidade de um efeito de troca (trade-off) em favor da fluência e em detrimento da complexidade e acurácia. Uma análise mais qualitativa dos dados individuais, no entanto, aponta para mudanças linguísticas positivas em termos de acurácia no decorrer das repetições. Além disso, as respostas dos participantes aos questionários pós-tarefa indica uma diminuição do nivel de ansiedade aliada a um aumento na autopercepção de produção acurada.

Palavras-chave: Repetição de tarefas, repetição imediata de

tarefas, apresentação de pôster, fluência, acurácia e

complexidade

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#### **ABSTRACT**

IT BEARS REPEATING: the effects of immediate repetition on learners' L2 performance in a poster carrousel task

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Advisor: Prof. Dr. Raquel Carolina de Souza Ferraz D'Ely

The present investigation aims at assessing the effects of immediate repetition of an oral task, in an EFL classroom context, on learners' proficient performance in terms of complexity accuracy and fluency. In an attempt to partially reproduce the study conducted by Lynch and Maclean (2001), the task employed here to elicit speech data was a *poster carousel*. Fourteen intermediate level speakers attending the *Comprehension and Production of Oral English - V* course of the English program at the Federal University of Santa Catarina (UFSC) repeated three rounds of presentations of the contents of a poster devised in class on a poster presentation task.

Results of the GLM 4 Repeated Measures ANOVA indicated statistically significant effects of the task in only one of the 8 measures of proficiency: fluency measured as pruned speech rate, (cautiously) indicating trade-off at the expense of accuracy and complexity. A more qualitative look at individual data, however, point to positive linguistic changes (in terms of accuracy) across rounds of repetition. In addition participants' responses to the post-task questionnaire indicate a decrease in anxiety and increase in self-perception of accurate production.

**Key-words:** Task repetition, immediate repetition, poster

presentation, fluency, accuracy and complexity.

Number of pages : 190 Number of words: 28.707

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#### 1. Introduction

#### 1.1 Context of investigation

The interest of Second Language Acquisition (SLA) research in understanding processes involved in second language (L2) oral production has been growing over the years (Fortkamp, 2000; D'Ely, 2006). As a result, the notion of repetition as a facilitator of learning and acquisition has seen its influence in the field grow as well (D'Ely, 2006; Gass and Selinker, 2001). Among the studies that have ivestigated the effects of task repetition on oral performance are: Bygate (2001b) Lynch and MacLean (2001), D'Ely and Fortkamp (2003), D'Ely (2004), D'Ely (2006), Ahmadian and Tavakoli (2010), Patanasorn (2010) Ahmadian (2011), Kim and Tracy-Ventura (2013). In second language classrooms, however, considering the given status of the Communicative Language Teaching Approach, there seems to be a tendency to favor pedagogical interactions which would result in a more dynamic and lively learning environment. In that context, the idea of language tasks repetition does not necessarily strike as appealing, once "'repetitious' or 'repetitive' are hardly the most exciting adjectives to apply to a classroom task" (Lynch and Maclean, 2001, p. 159). Thus, there is need to cooperate towards a better understanding of the benefits repetition, or more specifically immediate repetition (understood in this study as *Integrative Planning*) might bring to students' oral proficiency (understood here as CAF (complexity, accuracy and fluency) dimensions) in a second language, as well as reinforcing the validity of repetition to research on learners' oral production, both objectives this study intends to pursue. Moreover, repetition implies the process of rehearing, a metacognitive process seen as crucial for learning (Baddely, 1990; Ellis, 2003). It further highlights the idea that learners will be able to retrieve crucial information from long-term memory when performing a task, for a second time (Bygate, 2001b).

Taking into consideration that the analysis of the effects of immediate repetition on oral fluency and accuracy, for methodological purposes, takes place within task enactment contexts, it is of paramount importance to establish definitions of *task*, and *task repetition* 

<sup>&</sup>lt;sup>1</sup>As coined by Bygate and Samuda (2005) the term seeks to convey the idea that by immediately repeating a task, the learner can integrate knowledge acquired during a preceding task encounter, to a subsequent one.

(*Integrative Planning*) to inform this research: Tasks, will be understood in this study as defined by Ellis (2003) as "a workplan that requires learners to process language pragmatically in order to achieve an outcome that can be evaluated in terms of whether the correct or appropriate propositional content has been conveyed" (p. 16). It is this outcome, which is focused on meaning rather than form, that may be repeated by task performers in order to trigger the possible benefits of Integrative Planning.

By task repetition, in turn, I refer to "repetitions of the same or slightly altered tasks – whether whole tasks, or parts of a task" (Bygate and Samuda, 2005, p. 43). The notion of repetition has been conceptualized by Bygate (1996, 2001), who concluded that "previous experience of a task is available for speakers to build on in subsequent performance" given that "it is possible to harness earlier work on a task to elaborate more complex and/or more fluent performance" (2001, p. 43-44) irrespective of time elapsed between enactments (10 weeks in Bygate's first study: 1996 and 2001). In addition, Bygate and Samuda (2005) postulate that repetition should be seen as a type of planning, coined Integrative Planning by Bygate and Samuda (2005), which is in turn, seen as an improvement of speech in task repetition(s) subsequent to the first enactment of the task, drawn on experience produced by that first moment resulting in an "integration of knowledge and performance (...) facilitating changes particularly in the conceptualization and formulation phases of the production process" (p. 45). In other words, Integrative Planning integrates knowledge acquired during performance to performance itself, that is, knowledge derived from the first encounter with a task to the subsequent ones.

Taking the aforementioned into consideration, this study aims at partially reproducing - under alternate circumstances - the investigation carried out by Tony Lynch and Joan Maclean (2001) on the effects of immediate task repetition on students' language performance (more specifically focusing on leaners' fluency and accuracy). This study in accordance with Lynch and Maclean's, assumes that immediate repetition of oral outcome produced by students upon task enactment should have positive results on students' oral performance. To confirm this assumption fourteen participants were recorded while repeating poster presentations three times consecutively in a real classroom task enactment context. To further insights about possible gains, a post-task questionnaire was also administered to each participant in order to elicit their impressions of the task. Finally, since lacking the fundamental

statistical prescription of a random assignment of participants, the present study consists of a quasi-experimental research design.

### 1.2 Significance of the study

With the exception of a few studies, not many investigative experiments have been carried out on the issues of task repetition. D'Ely (2006) asserts that "in a task based perspective, the issue of repetition as a condition for enhancing learners' oral performance is exploited in Ellis, (1987), Gass et al. (1999), Bygate (2001b) Lynch and MacLean (2001), D'Ely and Fortkamp (2003), Silveira (2004) and D'Ely (2004)" (p. 53). More recently Ahmadian and Tavakoli (2010), have also looked at the effects posed by repetition on performance. Still, this scarcity of empirical studies makes it relevant to further investigate the topic under contextually different conditions. Moreover, Bygate and Samuda(2005) assert that repetition is a constant part of daily life in communication, thus reinforcing the validity of its implementation in the L2 classroom and its scrutiny by SLA researchers.

In addition to contributing to theoretical work on integrative planning, this research may also contribute to building knowledge on Language Pedagogy, once teachers, if made aware of the positive impact of task repetition, might feel willing to incorporate task repetition to the activities performed in the classroom.

## 1.3 Statement of the purpose

The objective of the present study, within the framework of Task-Based Approach (TBA) with a focus on Integrative Planning is to investigate the extent to which immediate repetition of a task affects students' speech, in terms of (1) *fluency*, (2) *accuracy* and (3) *complexity* as it has been constantly done by researchers in the area (Crockes, 1989; Foster and Skehan, 1996; Lennon, 1990; Ortega, 1999; Fortkamp, 2000; Kawauchi, 2005; Sangarun, 2005; D'Ely, 2004; D'Ely, 2006; Tavares, 2011; Ahmadian and Tavakoli 2010, Kim and Tracy-Ventura 2013).

The three dimensions of proficiency have been operationalized into eight different measures, the eight dependent variables of this study: three for fluency, (1) speech rate unpruned (number of unpruned words per minute), (2) speech rate pruned (same as previous but excluding partial words and self-repairs), (3) number of self-repairs per c-unit; two

for accuracy (4) number of errors per c-unit, (5) percentage of error-free clauses; and three for complexity (6) number of clauses per c-unit, (7) number of words per c-unit, (8) mean length of clause (number of words per clause). Each of these eight measures was analyzed across the three presentations yielding results that might reflect on the effects of the experimental condition *immediate task repetition* on participants' performances.

Considering the aforementioned objective, I seek to answer one research question further divided into three. They are:

RQ1: Does immediate repetition impact participants' oral performance?

RQ1a: If so, to what extent does it impact students' fluent oral performance?

RQ1b: If so, to what extent does it impact students' accurate oral performance?

RQ1c: If so, to what extent does it impact students' complex oral performance?

### 1.4 Organization of the thesis

In order to present the process and the results of this experiment this thesis is organized as follows: chapter 2, review of the literature, presents the theoretical background of this piece of research. It starts by establishing a working definition of task according to Ellis (2003). Next, it discusses speech production in light of Levelt's (1989). Then, the issue of task repetition is appraised and four empirical studies are reviewed: Bygate (2001b), Lynch and Maclean (2001), D'Ely (2006), and Ahmadian and Tavakoli (2010). Finally, L2 speech production (CAF) measures are discussed and contrasted.

Chapter 3 describes the procedures taken in order to collect and analyze the data used in this study. They include the context and overall design of the study, the selection of participants, the task employed to elicit speech data, the post-task questionnaires, the steps and criteria for speech segmentation and the statistical models that were applied for analysis. The chapter also reiterates the research questions and poses the specific hypotheses inspiring the investigation.

In Chapter 4, the results obtained from the data are discussed, initially in light of the statistical analyses conducted and the responses to the post-task questionnaires, and posteriorly, individual instances of

language change found during data transcription and segmentation are considered with a qualitative look. Finally, main trends among participants' responses to the questionnaires are highlighted and discussed.

Last of all, chapter 5 summarizes the findings of the study and offers a reflection on the role the different metacognitive processes involved in immediate repetition might play on learners' oral performance. In addition, chapter 5 also discusses the limitations of the study with insight for corrections and future research. Lastly, possible pedagogical implications derived from the findings are considered.

#### 2. Review of the literature

#### 2.1 Introduction

The following review aims at clarifying some of the theoretical concepts that appear as the basis of the present study. As previously mentioned, the objective of this study is to identify the benefits of immediate repetition of a task (interchangeably referred to as *Integrative* Planning) on learners' oral fluency, accuracy and complexity. Hence, this review is divided into five sections: Firstly, an overview of the literature is provided on the task-based approach, aiming at familiarizing the reader with field and offering an operational definition of task. Secondly, Levelt's (1989) model of speech production for L1 is summarized in order to set the theoretical basis in light of which the effects of task manipulation to L2 learners speech production can be interpreted. Thirdly, an elaboration of the concept of task repetition and how it affects different psycholinguistic levels of speech production is presented along with Bygate and Samuda's (2005) case to understand it as a type of planning: Integrative Planning. Following, in order to contextually ground this study on the academic research conducted in the area, four empirical investigations on repetition will be reviewed: Bygate (2001b), Lynch and Maclean (2000, 2001) which served as inspiration for the present study, D'Ely (2006), and Ahmadian and Tavakoli (2010). Finally, to close this chapter, the measures of Complexity, Accuracy, and Fluency (CAF) employed in this study are reviewed and a brief discussion on their uses and implications is provided.

# 2.2 Establishing a working definition of task

Despite walking hand in hand with second language acquisition (SLA) research since its early years, according to Ellis (2003), only when the study of SLA shifted from trying to understand how learners acquire a second language to incorporating insights from theorizations to classroom dynamics, did tasks become an object of research: "view of SLA research involving tasks show a development from a time when tasks were viewed simply as instruments for investigating SLA to the present where tasks are now seen as objects of enquiry in their own

right" (p. 26). Moreover, Ellis points to the fact that task-based research is now informed by a number of theoretical perspectives, as for example: "variability theory, the Input and Interaction Hypotheses, socio-cultural theories of learning, theories of language competence and of speech production, and theories relating to the role of conscious attention to form" (p. 26). The number of SLA studies informing and focusing on tasks has led Ellis (2003) to conclude that tasks, currently, would hold a central role in SLA research as well as language pedagogy.

The prominent position tasks acquired in SLA posed, however, a need for researchers to work towards a unified and comprehensive definition of what a task consists of, or more precisely, what a task is. From the beginning, Ellis (2003), referring to Crookes (1986), admits a problematic lack of consensus (or either plurality of perspectives) among researchers, as to what defines a task. Bygate, Skehan, and Swain (2001, p.11) advocate that "definitions of task will need to differ according to the purposes for which tasks are used", if for research or pedagogical aims.

Ellis (2003) concurs that the existing definitions look at the challenge of defining a 'task' through a spectrum of dimensions that may affect the purpose of a given task. Some of them, where language use is necessary for completion, are: perspective, authenticity, language skills, cognitive processes, and outcome.

One dimension that particularly called Ellis' attention and which is of remarkable relevance to the present study was the nature of mental or cognitive processes taking place during task performance. Ellis (2003) asserts that tasks "clearly, do involve cognitive processes such as selecting, reasoning, classifying, sequencing information, and transforming information from one form of representation to another" (p. 7). On a similar notice, Prabhu postulates that tasks involve "some process of thought" (as cited in Ellis, 2003, p.7) and should also involve a certain level of reasoning.

In his study of the possible effects of repetition Bygate (2001) states - within the context of task repetition - that "In producing a second language, then, speakers have to integrate their perceptions of formulation possibilities with their articulation and with a broader communicative intention" (p. 25). His argument being that taking into consideration Levelt's (1989) blue print of language processing (further discussed in the next session), repetition would allow students to shift the focus of their attention from conceptualization to a more refined search of lexico-grammar items through which they can match meaning

and form in a more accurate and complex fashion. That assumption exemplifies the concern with cognitive processes involved in task performance that research on repetition stands for.

Finally, weighing the definitions found in the literature, considering the dimensions that shape these definitions, and managing to encompass the features believed to characterize a task, Ellis postulates his own definition which I believe to be both comprehensive and well informed, and therefore, shall be the operational definition for the purpose of this thesis:

A task is a workplan that requires learners to process language pragmatically in order to achieve an outcome that can be evaluated in terms of whether the correct or appropriate propositional content has been conveyed. To this end, it requires them to give primary attention to meaning and to make use of their own linguistic resources, although the design of the task may predispose them to choose particular forms. A task is intended to result in language use that bears a resemblance, direct or indirect, to the way language is used in the real world. Like other language activities, a task can engage productive or receptive, and oral or written skills, and also various cognitive processes. (Ellis, 2003, p. 16).

# 2.3 Oral language processing: Levelt's model

Before providing a detailed notion of integrative planning, to follow Bygate and Samuda's steps (2005 p.43), a need to understand the processes involved in task performance, in this case, speaking, must be acknowledged. According to Ahmadian and Tavakoli "the most frequently used and cited model of speech production research is Levelt's (1989)" (2010, p. 36). Skehan (pg. 4, 2014) reiterates that "a model of first language speaking, such as Levelt's (1989, 1999; Kormos 2006) has to be the starting point for a careful analysis of the psycholinguistic processes involved in second language speaking". Thus, this model has offered a constantly sought after level perspective of speech processing that serves as base for speech production models in L2. Within a psycholinguistic frame of reference Levelt (1989) presents his metaphor of the blueprint for the speaker (constituted of hierarchically structured levels) with a goal to unveil the processing of information in the mind that allows for the processing of speech. The model is composed of 4 levels, the conceptualizer, the formulator, the

articulator and the speech comprehension system. They are autonomous and automatic and rely on the latter to function simultaneously and provide for fluent speech production. The first of them, the conceptualizer, is a level of planning. It allows the speaker to retrieve previous knowledge on the content of the speech. As such it is a preverbal message. However, it also directs this information towards formulation, serving as input for the second level, the formulator, to turn the message into a linguistic structure, a phonetic or articulatory plan. That is asserted to happen (1989, p.11) in two ways: via grammatical and phonological encoding. The former stands for the finding and organizing of the relevant lexical units embedded of their semantic as well as syntactic implications. The latter represents the association of said units to the adequate phonological and phonetic patterns. Added of the surface structure previously kept in a syntactic buffer during grammatical encoding, this phonological/phonetic pairing forms the plan that serves as input for the articulation level. The articulator (the third component of speech processing) serves the function of producing actual speech, having the previously devised articulatory plan as directives. The last component of the model is the speech comprehension system, which is related to self-monitoring. Even though much of this monitoring is performed by the conceptualizer, the controlling of problematic occurrences related to content and structure in both internal or external speech is attributed to the speech comprehension system (1989, p.14-15).

Three of the concepts discussed above should be highlighted for providing the basis for the understanding of the model presented for speech processing. The first is planning, without which there can be no conceptualization once the speaker must plan on a message to produce it. The second is control, once a lot of it is required (attentional resources are demanded as the fluent speaker undergoes a decision making process) for communicating and monitoring a message. The third is automaticity, which, despite being rather seemingly contradictory with the notion of control, is a necessary underlying function of the speech production the process.

Moreover, once the system is lexically driven (that is, it's the speaker's knowledge of lexical units that coordinates the expression of intentions as utterances), of all processes involved in the different levels of the production of speech, one considered to be at its core is grammatical encoding (Bock and Levelt, 1994). The authors suggest this core process subdivides into *Functional processing* (comprehending

selection of lexical items added of their grammatical information, and assignment of said items to adequate syntactic roles) and *Positional Processing* (comprising assembly of components, thus triggering word ordering, and inflectional information).

Once the main theoretical constructs giving an account of L1 speech production have been overviewed, I now turn my attention to a model that (taking cross language interference heavily into consideration) attempts to explain the production of second languages in a more comprehensive manner: De Bot's (1992) adaptation of Levelt's model. The author's main assumptions are that it is in the conceptualizer that decisions are made as to what language to use in order to convey the meaning. This decision takes place at the macro-planning level and is a component of the preverbal message. The formulator, in turn, being language specific, applies distinct mechanisms to grammatically encode L1 and L2 speech. The author also assumes that once bilingual individuals produce simultaneous speech plans (in L1 and L2), processes of activation and suppression become necessary, and as a consequence, code-switching may take place (as the language being used may be suppressed as the most commonly used language is activated). Accordingly with this assumption, he proposes the rather impacting notion that the mental lexicon is just one. That it disregards different languages, which are placed within it into distinct subsets, and then are activated according the one at use during the act of speech. Finally, De Bot (1992) believes that the articulator too is only one (for L1 and L2), thus sounds are considered to be independent from language.

In summary, due to the constant effort employed by the L2 speaker to maintain first and second languages apart, avoiding interference, L2 speech production can be considered significantly less economical than that in L1. Besides, since control becomes even more salient and demanding in L2 production (its processing components require more noteworthy attention), this capacity to *automatically control* processes added of the active knowledge of the speaker in a second language will define how well (to what level of success) the system will perform and L2 speech will be produced.

Levelt's model added of DeBot's perspective on it have set the theoretical basis for the unveiling of L2 speech production as well as enlightened the path to nurturing speakers L2 oral skills. Based on Bygate (2001b) and D'Ely (2006) I will highlight two notions that may aid the stimulation of second language acquisition: (1) To a certain

degree (varying across levels - being considerably high for articulation and somewhat less so for conceptualization) automation is indispensable for the production of speech; and (2) time is also essential. So on-line (during the act of speech) planning for implementation of previously devised concepts is bound to take place and to result in the occurrences of fillers (non- and lexically filled pauses) and self-repairs (false-starts, repetitions, replacements).

#### 2.4 Task repetition or Integrative Planning

It is fairly agreed among Second Language Acquisition researchers and language teachers that there is a gap between the amount of information available to learners and the knowledge actually applied to their production in the second language, or in Bygate and Samuda's (2005) words: "a common learning and teaching problem is to get learners to integrate knowledge that is available to them into their active language use" (p.37). The concern with this issue led the authors to formulate two main questions: "how to lead students to integrate prior knowledge into performance", and "how best to help them to identify new knowledge needed for their development" (p. 37).

One possible strategy for raising students' awareness on their L2 performance in contrast with their knowledge of the language is propitiating students with subsequent chances to perform a certain productive task. This is where task repetition finds its relevance and becomes an important topic of investigation to both SLA and Language Pedagogy research. On this notice, Bygate and Samuda (2005) engage on exploring "the possibility that doing a communication task a second time can help learners to achieve integration of what they already know into what they do" (p. 38). Their hypothesis being that although the novelty of the demands in the first take at a task makes the challenge more appealing, therefore allowing for more creativity, it is in the subsequent encounters that the learner, profiting from experience from the previous performances, may focus their attention on the language, finding alternate ways to convey the same message: "at the second encounter, the learner is not only cognitively prepared, but . . . there is a chance that on the second occasion the learner will generate more sophisticated output" (Bygate and Samuda, 2005, p.38).

With that in mind, Bygate and Samuda (2005) set out to "making a case for seeing task repetition as a sort of planning" (p. 38), which regards the experience of performing the task itself as relevant. They

call this new perspective *integrative planning* in an attempt to understand in what ways this type of planning may be beneficial to learners.

Before laying out the functioning of integrative planning, however, Bygate and Samuda (2005) stipulate a need to understand the processes involved in task performance, more specifically those related to speaking. For that purpose, the authors propose the use of Levelt's (1989) model of speech production. As explained in the previous section, Levelt postulates that the production of speech is made possible through three different levels of processing: *conceptualization* (deciding on a conceptual content); *formulation* (finding appropriate words to express that content); and *articulation* (actually uttering the words). Rather than consecutively, these three processes happen simultaneously in an overlapping 'cascade-like' operation which demands a certain level of automation from each one of them. In respect to performance in a second language, each of these processes may pose a particular level of difficulty to learners.

Bygate and Samuda (2005) state that repetition is believed to be composed of two distinct phases: the first and the following enactment(s) of a task. In the first phase, learners "organize the cognitive content, scope out the likely useful lexico-grammar, and process it in real time, generating an experientially derived multi-level schema to support subsequent linguistic work" (p. 45). In the second phase, then, speakers can produce more elaborated speeches building on the first enactment. Thus, the first enactment is seen as a sort of planning that will reflect on an "integration of knowledge and facilitating particularly performance (...) changes conceptualization and formulation phases of the production process" (p. 45).

But what are the benefits of task repetition to the processes of speech production? First, Bygate and Samuda (2005) advocate that articulation plans are already pre-stored and are not therefore likely to be affected by repetition. Nevertheless, the impacts on formulation and conceptualization are relevant, and will be discussed as follows: In regards to conceptualization, task re-runs facilitate "bringing back to working memory a trace of the whole task content" (Bygate and Samuda, 2005, p. 44) with the positive twist that on the second time around, information details which might have been left out of working memory during the first performance are more likely to be retrieved: "familiarity with the input material at time 2 releases capacity to notice

more of the material than first time around" (p. 45). In addition, the authors also state that: "conceptualization is likely to be much quicker second time around, since much of the work has already been carried out" (Bygate and Samuda, 2005, p.45).

The benefits of prior experience to formulation, in addition, are expected to be even more noteworthy. First of all, Bygate and Samuda (2005) explain that the process of formulation is both faster and more accurate in the subsequent performance of a task. Once the connections between the content (concept) and the words (or lexico-grammatical forms) are established in the first performance, the next ones will benefit from quicker recovery of these connections, and from an improvement in 'lexico-grammatical searches' built on previous formulation. That is to say that the speaker will have more 'mental' space and time to refine, and revise (monitor) their lexical choices. Having said that, the authors conclude that:

In sum, the impact of task-repetition on formulation might be usefully described as one of 'integration' of potential resources into the actual performance of the task: that is, 'integration' in terms of the amount of content detail expressed, the speed of lexico-grammatical accessing, the appropriacy of lexico-grammatical selection, and grammatical accuracy. (Bygate and Samuda, 2005, p. 45)

In conclusion, what makes the issue of repetition even more fascinating is that task repetition does not have a positive effect on the outcome alone, but on the whole language processing itself, allowing the learner to develop more polished and refined speech production processes altogether.

# 2.5 Review of empirical studies

Under the scope of task-based approach, as mentioned before, the matter of repetition as a circumstance for enhancing learners' oral performance is exploited in Ellis, (1987), Bygate (2001b) Lynch and MacLean (2001), D'Ely and Fortkamp (2003), D'Ely (2004), D'Ely (2006), Ahmadian and Tavakoli (2010), Patanasorn (2010) Ahmadian (2011), Kim and Tracy-Ventura (2013) to mention a few. For further reference, a summary table of studies on task repetition is provided in Appendix A. In this section, four empirical investigations, relevant to the present study, will be reviewed: Bygate's (2001), Lynch and

Maclean's (2001), D'Ely (2006), and Ahmadian and Tavakoli (2010).

Bygate (2001) aims to explore "one likely influence on development, that of learners repeating a task or practicing a type of task" (2001, p.23) as a way to better understand cognitive processes involved in said task practices. The author turns to Levelt's (1989) (as cited in Bygate, 2001, p.24-25) account of language processing, to serve as theoretical basis of his understanding of how tasks affect language performance. The author believes that repetition, allowing speakers to draw on conceptual structuring and on encodings previously used, may give rise to improvement in fluency (propitiating faster speed and smoothness in discourse), accuracy (at the cost of speed, allowing more attention to be payed to the extent at which production matches the norm), and complexity (giving room to more complex and sophisticated formulation as attention is dedicated to redundant aspects of language) (p. 27). In other words, repetition is believed to enable a shift of attention from conceptualization to formulation and articulation as experience from one task allows the learner to carry out the same task with freer space in their minds (p. 29).

With that in mind, Bygate aims at answering 3 research questions (p. 30): (1) Would there be significant differences between performances on a task type practised over a 10-week period, compared with performance on a type of task that had not been practised ('task-type practice')? (2) Would there be significant differences between a repeat performance of a task performed 10 weeks earlier, and performance on a new task ('task repetition')? (3) Would there be significant overall differences between performances on the two types of task ('task effect')?

The participants selected were 48 NNS studying at the University of Reading. They were divided into 3 groups with 16 students each (a control group, an interview group, and a narrative group). At the beginning of the study the level of proficiency of the participants was assessed via IELTS and t-tests (for comlpexity, accuracy, and fluency), and no major differences were found.

The study made use of two sets of tasks (interviews and narratives) with six standardized versions of each being applied at every 2 weeks over a period of 10 weeks. The interviews were based on pictures and the narratives on silent cartoon films. During the tasks the participants were asked in a way as to make them think the focus of the tasks was content rather than form. Over the 10 week period, testers and participants met five times, but the control group only did the 'time 1'

and 'time 5' tasks in order for the researcher to look for changes taking place without the other 3 weeks treatment undergone by the narrative and interview groups. At 'time 1' all participants were recorded on 1 narrative and 1 interview. At 'times 2,3, and 4' the experimental groups undertook two tasks per time - narratives or interviews according to group. At the 10th week ('time 5'), all participants were given two interviews and two narratives, one of each was a repetition of the task they had done at 'time 1'.

Taking this design into consideration, research questions were addressed as follows: RQ1 through a comparison of performance of the experimental groups on task types they had worked on with those they had not; RQ2 by comparing performance of tasks done at time 1 and repeated at time 5 against the new version of each task done only at time 5; RQ3 through a comparison of differences at time 5 between performances on the interviews and on the narratives (p. 30).

The study included three independent and three dependent variables. The independent variables were: (1) 'task-type practice' that compared 10 weeks practice in one type as opposed to no practice in the other; (2) 'repetition', which contrasted performance of repeated tasks in 'times 1 and 5'; and (3) 'task type', which explored the effect of a task type on language production (p. 33). The dependent variables, on the other hand, represented qualities of the participants' speech (fluency, accuracy, and complexity), and were operationalized as follows: (1) fluency was measured by numbers of unfilled pauses per t-unit; (2) accuracy was calculated as incidence of errors per t-unit; (3) complexity, was assessed in terms of number of words per t-unit (p. 34).

Finally, three hypotheses are presented by the author (p. 35). The first hypothesis predicted that "narrative tasks would give rise to less fluent and less accurate, but more complex, output". The second posed that "task repetition would affect task performance, giving rise to greater fluency, accuracy and complexity on repeated versions of tasks. The third hypothesis assumed that "task 1 type practice would affect subsequent performance on the task types".

The results yielded by the study were presented addressing each independent variable individually. First of all, the 'task type' variable imparted a noteworthy effect on fluency and complexity but no effect on accuracy whatsoever - which was also mostly true of the other independent variables. That provides empirical evidence that different tasks affect language performance differently (p. 37-38). The second independent variable discussed was 'task repetition'. ANOVA results

revealed significant effects on fluency and complexity, but not accuracy. The results were remarkable given the 10 week span between 'times 1 and 5'. Fluency was affected on the interview but not the narrative, which led to the assumption that repetition allows for more complex production. Moreover, the trade-off effect appeared again once rise in complexity came at the expense of fluency and accuracy (p.40). Finally, the third independent variable discussed was 'task-type practice'. In relation to the effects of practice of a task type on performance the author grants that disappointingly "the study provides no clear evidence that practicing a task type will have a facilitating effect on the future performance of any other tasks of the same type" (p. 41). Nonetheless a partial 'task-type practice' effect was found in relation to repetition: speakers were more fluent on the repeated version of task types they had been exposed to than the type they had not practiced over the experiment. That suggests that performance in repeated tasks may be primed by experience from tasks of the same type.

Based on his findings the author reassures the remarkable effects of task repetition asserting it to be the result of "highly contextualized cognitive rehearsal, releasing spare capacity on the part of the speaker to increase fluency or complexity" (p. 42). Thus, according to the researcher, teachers and students should be encouraged to profit from the benefits of repetition as to better focus on relevant form-meaning relations. This practice would, then, allow students to move further ahead from solely improvising form while dedicating attention to content (p.44).

Lynch and Maclean (2001), in turn, set out to investigate, to a certain degree centering on students' perspectives, the ways which repetition may aid students in developing language. They took a "slightly different approach to the effects of task repetition" (p. 142) than that of Bygate (2001), once their task dealt with immediate repetition whereas Bygate's employed repetition over a few weeks time. Their questions were: first, do learners gain from repetition of the task? Second, in what ways do they gain? Third, do they think they gain? Fourth, in what ways do they think they gain? (p.142)

The study took place within the classes the researchers taught in an ESP course named 'English for Medical Congresses' and the activity implemented to bring about repetition was a poster carousel. The participants (14 students from six non English-speaking European countries, aged from their late twenties to late fifties) were initially tested for listening capacity and lexico-grammar knowledge in the

molds of the TOEFL test, and their scores ranged from 400 to 600.

During the task, the learners were paired up and asked to design a poster from a 800 to 1000 words article within the time span of 1 hour. The posters were exposed, and while one of the students in the pair (the visitor) went round the room asking questions about the content of the other 6 posters one by one, the other student (the host) remained by their poster answering questions by the visitors in the other pairs. The hosts were instructed not to give mini-lectures, but to simply respond to the questions asked by each new visitor. When the first round was completed the hosts became the new visitors and started going round the room while the former visitors became the new hosts.

In the discussion, Lynch and Maclean first refer to the results of their previous publication (Lynch and Maclean, 1999) where they reported the results of two of the 14 participants: Alicia, the lowest scoring student (TOEFL 400) and Daniela, the highest scoring (TOEFL 600). In 2001, three more participants (all of whom had ranked between Alicia and Daniela in their TOEFL scores) were reviewed.

The results for the first two participants showed evidence of attention to language (self-corrections of vocabulary, pronunciation, and grammar), and attention to content (slower speed of speaking at conceptually difficult points, and incorporation of contents introduced by previous interlocutors). Overall, both had linguistic improvements with repetition as Alicia (TOEFL 400) decreased the frequency of word order mistakes, and Daniela (TOEFL 600) increased the quantity of information she provided and the precision of word choices (p. 144-145).

The analysis of the other three participants only corroborated those findings, as the three of them "also selected and produced more accurate L2 forms in successive cycles" (p. 155), in general improving in terms of phonology, vocabulary and semantic precision. Interesting enough there was also evidence that the improvement happened in different ways to different participants, suggesting a relation between the types of improvement and the different levels of English. The three lowest scoring participants improved in syntactic accuracy, but the two highest did not. Moreover, the two participants with the lowest scores made adjustments in response to the speech of their interlocutors (visitors) while the student with the third lowest score was able to self-correct by monitoring her own speech.

When thinking about the reasons for the observed positive effects of the immediate repetition on students' language, Lynch and Maclean

(2001, p.156) pose two claims. First of all, some of the participants felt more relaxed as the poster presentation (coined in the study as poster carousel) went on. Second of all (referring to Bygate 1996 and 2001), repetition allowed for a shift of attention from a preoccupation with conceptualization, to a greater possibility for working in formulation and articulation which would enable students to better match form and meaning and better understand language organization. Lynch and Maclean assert that "it could be that in the poster carousel the recycling and practice available through the series of visitor cycles offer a sort of 'planning', which brings benefits that are realized (...) by the more proficient learners" (p. 156). As mentioned above, Bygate and Samuda (2005) would later call this planning 'Integrative Planning'. To conclude, the authors state that: "what makes the carousel successful as a communicative task is the particular combination of text input, task structure and learner interaction, which pushes the host towards more accurate performance" (p. 158).

Another study that assessed development in performance through repeated task enactments and which greatly influenced the present investigation was the piece of research carried out by D'Ely (2006) as her PhD. thesis. The investigation had the two-fold objective of (1) examining the influence of detailed strategic planning and repetition on learners` oral performance, and (2) examining the impact of the combination of conditions (strategic planning plus and for repetition) on participants' oral performance (pg. 123-124). The objectives were motivated by two assumptions drawn from the literature: (1) that that the conditions under which learners' perform orally trigger different metacognitive processes, and (2) that of the combination of conditions having a positive effect on learners oral performance (pg. 124-126)

In her study involving 47 intermediate EFL learners oral speech data was elicited through a video-based narrative task. Moreover, the researcher employed eleven different measures of proficiency in order to gauge fluctuations in performance in the four dimensions of proficiency approached: fluency, accuracy, complexity and lexical density. For fluency, speech rate unpruned, speech rate pruned, number of silent pauses per c-unit, total amount of silence, number of filled pauses, total amount of filled pauses and number of self-repairs were calculated. The researcher employed the number of clauses per c-unit measure to assess complexity, and the number of errors per clause and the number of error-free clauses to analyze accuracy. Finally, weighed lexical density was calculated for the lexical density dimension.

Regarding repetition, more specifically, the author assumed it would impact all four proficiency dimensions investigated. First, fluency would be influenced due to the increased familiarity repetition would allow with the task and the decreased pressure to perform on-line granted by the integration of knowledge acquired during the first encounter with the task to the subsequent encounters. Complexity and weighted lexical density, in turn, would both be favored by the same process of knowledge integration. Finally, accuracy might be positively influenced once integration of previous knowledge is believed to allow speakers to concentrate on correctly using form on-online.

These assumptions led to the 2 main research questions that guided the study: (1) "How do the five groups perform under the strategic planning, the repetition, the strategic planning plus repetition, the strategic planning for repetition and the no planning/no repetition conditions?", and (2) "Is there a difference in the performance of the five groups in terms of fluency, complexity, weighted lexical density and accuracy?" (pg. 127)

Based on the research questions and its implications the researcher raised five different hypotheses to further validate the inquiry: the first predicted positive effects of all four experimental conditions (strategic planning, repetition, strategic planning plus repetition, and strategic planning for repetition) on fluency when compared to the control group. The second hypothesis expected a positive impact to all four experimental conditions on complex speech production. The third hypothesis foresaw greater lexical density under the experimental conditions to all groups when compared to control. The fourth predicted positive influence of the experimental conditions on accurate oral speech production. Finally, a fifth hypothesis stated that different conditions would influence oral performance differently (pg. 127-130). Owing to its increased level of elaborateness, the strategic planning for repetition condition is expected to yield more significant effects on oral performance than the other independent variables.

The main findings concerning the testing conditions involving repetition were positive in regard to lexical density and accuracy, corroborating further interest in the effects provided by repetition in learners' oral performance. In summary, D'Ely found that: (1) under the repetition condition there was greater lexical density than in the control group; (2) under the strategic planning plus repetition condition there was greater lexical density than in the control group; (3) under the strategic planning for repetition condition there was greater lexical

density than in the control group; (4) under the repetition condition there was greater accuracy than in the control group; (5) under the strategic planning for repetition condition there was greater accuracy than in the control group (pg. 142-164).

More recently, a study that regards repetition as one performance condition which might affect proficiency in terms of complexity, accuracy, and fluency was conducted by Ahmadian and Tavakoli (2010). The study entitled "The effects of simultaneous use of careful online planning and task repetition on accuracy, complexity, and fluency in EFL learners' oral production", as the name suggests, aimed at unveiling the influence of repetition added of online planning to learners' production of proficient speech. Four different planning and task repetition conditions were tested with sixty randomly-assigned intermediate-level Iranian EFL learners: (1) careful online planning without task repetition, (2) pressured online planning with task repetition, (3) careful online planning with task repetition, and (4) pressured online planning without task repetition. Six research questions (grounded on hypotheses based on previous investigations) guided the study, three of which were concerned with repetition. The first was "Does repeating the same task with a one-week interval in between increase fluency of EFL learners' oral production?" (pg. 43). This hypothesis was based on findings by Bygate (2001) and predicted that this type of repetition would generate positive changes in oral fluency. The second question that refered to repetition was "Does repeating the same task with a one-week interval in between enhance EFL learners' complexity of oral production?" (p. 43). Once again based on Bygate (2001) it was hypothesized that repetition would significantly enhance participants' complex oral speech.

The last question regarding repetition "Does simultaneous use of careful online planning and task repetition enhance all dimensions of oral language production (accuracy, fluency, and complexity)?" (p.44), rested on the hypothesis that positive effects for all three dimensions of proficiency would be found on this condition once repetition would compensate for disfluencies imparted by careful online planning.

The procedures approached by the researchers involved randomly dividing the participants into four groups of fifteen students and pretesting them for accuracy (with a 50-fill-in-the-blanks items grammar test), fluency (using a vide-based narrative task similar to the main task of the study), and online processing ability (via the listening subtest of TOEFL) (p. 44-45). The main task consisted of narrating the story of a

15-minute-long video under one of each of the four conditions.

Under the pressured online planning with repetition participants were told to tell the story in 6 minutes and were not told they would redo the exact same task a week later. Under the careful online planning with repetition condition, unlike in the previous condition, while repeating the task one week later participants were not given the 6-minute time restriction and were asked to take account of the details of the story (pg. 47). Furthermore, in order to analyze the speech data, two measures were used for each of the three dimensions of proficiency investigated. Percentage of error-free clauses and percentage of correctly-used verb forms were calculated for accuracy. For fluency the researchers measured the rate of syllables per minute and the rate of meaningful syllables produced per minute. Finally, to gauge syntactic complexity (through subordination) a ratio of clauses to AS units was calculated whereas with syntactic variety, the total number of different grammatical verb-forms was tallied (p. 48).

Overall, the results yielded by the study revealed that the simultaneous use of careful online planning and task repetition pose a significant positive effect on accuracy, complexity, and fluency. More specifically, regarding the three (out of the five) research questions concerning repetition mentioned here the results were that: (1) task repetition was found to enhance participants fluent oral speech; (2) task repetition assists EFL learners complex speech production; (3) task repetition allied to online planning enhanced participants accurate, fluent, and complex oral speech production even further than either the repetition or the careful online planning conditions alone (p. 49-54).

Following Ellis (2005, 2008) the researchers understand repetition as a type of pre-task planning, and attribute their finding that repetition enhances complexity and fluency to claims that performance in language production relates to pre-task planning. Their psycholinguistic explanation of the finding (based on Huitt 2003) focuses on the language processing principle of a control mechanism "which oversees the encoding, processing, storage, retrieval, and utilization of information" (Ahmadian and Tavakoli 2010, pg. 54-55). This executive mechanism consumes some of the limited attentional capacity available, and does even more so when handling a novel task than a familiar one. In that sense, repetition may assist the learner in two ways: (1), the control system requires less processing power once it has previously overseen process of information retrieval and organization, and (2), meaning-processing mechanisms at the conceptualization level

of Levelt's (1989) model too are less demanding of attentional resources once traces of meaning are already available upon repetition (Ahmadian and Tavakoli 2010, pg. 55).

## 2.6 Measures of L2 speech performance

There has been intense debate among household names in the area such as Norris and Ortega (2009), Ellis (2009), Housen and Kuiken (2009), Palotti (2009) about the coherence, generalizability, and overall validity of the most commonly used measures of assessment of fluency, accuracy and complexity (CAF). In the literature CAF measures have been operationalized differently, in a number of ways. The problem at hand is that such variation makes comparisons among research results a problematic pursuit (Skehan, 1996; Ortega, 1999; Fortkamp, 2000).

Another protuberant issue that has been targeted with criticism regards researchers concomitant employment of measures that arguably tap into the same sub-dimensions of the theoretical constructs of speech performance (Norris and Ortega 2009, p. 560-561). This discussion justifies my choice of the eight different measures of fluency, accuracy, and complexity employed in this study, as they are believed to assess different sub-dimensions of the different CAF constructs, hence providing an expected more solid perception of changes in performance across the three immediately repeated production moments. As Ellis (2005) highlights, employing a variety of different measures to analyze the different dimensions of speech may allow said dimensions to be more dependably gauged. Moreover, the experimental exploitation of varied operationalizations of the same measures has been contributing to forming the theoretical basis upon which the overall use of these measures can be grounded (Tavakoli and Skehan, 2005; Skehan& Foster, 2005; D'Ely, 2006).

# **2.6.1 Fluency**

The concept of fluency rests on definitions by Foster and Skehan (1995) who understand fluency as a temporal phenomenon that reflects "the capacity to cope with real time communication" (p.304). With the purpose of measuring the speed with which participants produce language, speed fluency will be assessed in this study by the general measures of speech rate unpruned and pruned, as they have been profusely adopted by L2 speech production researchers (Foster and

Skehan, 1996; Lennon, 1990; Ortega, 1999; Fortkamp, 2000; Mota, 2003; Kawauchi, 2005; Elder and Iwashita, 2005; Sangarun, 2005; D'Ely, 2004; D'Ely 2006). The measure of speech rate unpruned gives the researcher an overview of speech understood as fluent for being non-silent (Mota, 2003 p. 78) found through a ratio of uttered words per time (in minutes) of speech, including repetitions, partial words and self-repairs, while speech rate pruned reflects on the amount of content-bearing speech (subtracted of non-rhetorical repetition and self-repairs) produced in function of time.

In addition, fluency conceptualized as repair (number of reformulations, replacements, false starts and repetitions of words or phrases) has also been assessed in the study as did (Foster &Skehan, 1996; Skehan& Foster, 2005; Kawauchi, 2005; Elder & Iwashita, 2005; D'Ely 2006). The measure employed to assess repair fluency was the number of reformulations per c-unit.

The C-unit was chosen based on D'Ely (2006) and to its vast employment in the literature, as well as to ensure consistency of measures across the study, since the segment was used in measures of all three CAF dimensions. The c-unit was coined by Loban (1966) and is considered a more appropriate unit of segmentation of oral speech (Foster and Skehan, 1996) as it accounts for ellipsis (including non-finite clauses and non-clausal constructs as verbless clauses that still carry communicative value) a rather common phenomenon in spoken language. The working definition of c-unit is "each independent utterance providing referential or pragmatic meaning of one single independent finite clause or else and independent finite clause plus one or more dependent finite or non-finite clauses" (Foster and Skehan, 1996, p. 310). Consequently, being a supra clausal unit, the c-unit allows credit to be given to speakers who take on the production of more embedded (and therefore sophisticated) speech (Foster et all, 2000).

The three measures of fluency employed in this study were chosen as to try to encompass distinct sub-dimensions of fluency understood as speed and repair. In this sense they all differ in the way they produce representations of how fluent a speech sample is. Speech rate (unpruned and pruned) are different as the latter reflects content-circumscribed fluency and the former translates fluency into lexically-filled time. Number of self-repairs, on the other hand, provides a suprasentencial view of speech impediment that is broader than that produced by speech rate pruned. The self-repair count is not simply the subtraction of pruned words from unpruned, it is, instead, an account for

level of monitoring presented by the speaker, once many words together may amount to just one reformulation.

## 2.6.2 Accuracy

The second dimension analyzed in this study was accuracy. Understood here (as per D'Ely and Fortkamp 2003, D'Ely 2006) as adequacy to the prescriptive, normative grammar, or simply, grammaticality. Works of reference in this study were Quirk and Greenbaum (1973) and Murphy (2012). The issue of grammaticality, error segmentation and the external rater will be better discussed in section 3.8.2. Since general measures of accuracy are believed to be more appropriate to assess overall gains in performance in unfocused tasks (Skehan 2005) and D'Ely (2006) asserts that "The trend in taskbased research is to use general measures and only few planning studies (Ellis, 1987; Hulstijn&Hulstijn, 1984; Kawauchi, 2005) have investigated specific linguistic forms." (p. 65), two general measures were employed to evaluate accurate speech. They were: incidence of errors per c-unit (D'Ely&Fortkamp, 2003; D'Ely, 2004, adapted from Bygate, 2001), and percentage of error-free clauses (Tavakoli and Skehan, 2005, D'Ely 2006).

The two measures differ from each other as they look into opposing (and not necessarily equivalent) nuances of accurate speech: erroneous and error-free performance. The number of errors per c-unit measure produces a general figure of the error density of the data but does not let us know how unimpeded of errors most of the speech was. It does not provide a look into the distribution of errors. Said gap can be filled with the employment of the percentage of error-free clauses measure on a complementary role, as is the trend in task-based literature (D'Ely 2006, Skehan 2014). The latter measure, I believe, also taps into the dimension of fluency, in a clausal level, as it lets the researcher know what amount of speech did not have its fluidity interrupted by errors. Still, according to Bygate (2001) the number of clauses per cunit, t-unit or 100 words, can be considered a more sensitive measure once it does not reduce the amount of registered errors, as does the percentage of error-free clauses.

# 2.6.3 Complexity

The complexity dimension is meant to tap into the production of

syntactically complex speech. Nonetheless Norris and Ortega (2009, p. 562-564) point to the need to explore complexity in at least 3 different levels: (1) as an index of subordination, commonly operationalized as an index of clauses by unit (Skehan and Foster 2005 C-Unit; D'Ely 2006 Cunit; Tavares 2011 C-Units; Ahmadian 2010 and 2011 AS-unit) or number of dependent clauses by the segmentation unit chosen (Bei 2010 AS-unit; Lennon 1990 T-unit); (2) global or general complexity measured through afigure of words per unit (Bygate 2001b T-unit; Bei 2010 AS unit); and (3) sub-clausal/phrasal complexity assessed via a ratio of uttered words per clause (Bei, 2010; Bygate 2001b). In the authors' words: "it follows, then, that it will be wise to measure all three dimensions of complexity in the same data, and this will require minimally the combined use of one measure from each of the three families in the same study" (Norris and Ortega 2009, p. 564). The Mean length of clause has been discussed for resembling a measure of fluency. However, according to Norris and Ortega "mean length of clause (the only mea- sure to date that taps complexification at the subclausal or phrasal level) ought to be most predictive at an advanced point in development, when processes of grammatical metaphor begin to unfold and more synoptic styles emerge in the repertoires of high-proficiency L2 learners and users" (p. 564).

Therefore, in this study three different measures of complexity were employed to provide a broader and sounder perspective of complex speech produced in the three tasks. For subordination the number of clauses divided by c-units was employed. In order to tap into global complexity I used the number of words per c-unit, and finally, to explore sub-clausal complexity, I looked into the mean length of clause (number of words per independent and dependent clause).

In total, this study employed 8 related and complementary measures of oral proficiency: three for fluency: (1) speech rate unpruned, (2) speech rate pruned, and (3) number of self-repairs; two for accuracy: (4) number of errors per c-unit and (5) percentage of error-free clauses; and three for complexity: (6) number of clauses per c-unit, (7) number of words per c-unit, and (8) mean length of clause.

A more detailed view into the mechanisms adopted in the operationalization and application of the eight measures is provided in section 3.8. Along with the established quantification procedures found in the pool of empirical studies, for each of the measures, the consequent set of criteria that had to be adopted for data segmentation in this study is also discussed in those sections.

#### 3. Method

#### 3.1 Introduction

In order to explore the effects of task repetition (here interchangeably referred to as Integrative Planning) (Bygate and Samuda, 2005) on the fluency, accuracy and complexity of speakers of a second (or foreign) language, a confirmatory (and to a certain degree interpretative) study<sup>2</sup> was conducted with students of *LetrasInglês* (B.A. in English language and literature) at Universidade Federal de Santa Catarina, in Southern Brazil. This chapter aims at unveiling both the nature of the study, and the methodological procedures employed in the processes of data collection and data analysis. In order to achieve this goal the chapter is organized into eight sections as follows: section 3.2 presents the objectives of the study sided with the research questions it intends to answer and the hypothesis raised by the author; section 3.3 places the study within its contextual setting, presenting the context where the investigation was carried out, and the one from where the participants were selected; section 3.4 and gives an overview of the design of the study, aimed at providing the reader with an overall image of the investigation; section 3.5 provides information about the participants and their language background; section 3.6 describes (and justifies the choice of) the instruments employed in data collection - for that it depicts the architecture of the data-eliciting poster presentation task, and the elements that constituted the post-task questionnaires used to investigate participants' impressions of the task performed; section 3.7 mentions the steps taken for the initial data transcription, prior to segmentation and counting of units; section 3.8 explains, in detail, the proceduralization of the eight measures of proficiency employed in the study, and presents the steps and criteria taken to segment and count all units required by the aforementioned measures; finally, section 3.9 presents and justifies the choice of the statistical models used to analyze the scores yielded by the proficiency measures across repetitions of the poster presentations.

The option to keep the mechanics of the measures of speech production and the steps and criteria for data segmentation together in one subsection (3.8) was due to the dependence of the latter upon the

<sup>&</sup>lt;sup>2</sup>Confirmatory: correlational and experimental with control of classroom settings; Interpretative: with an emphasis on qualitative analysis (Ellis, 2001)

former since decisions had to be made and criteria had to be established during segmentation that relied heavily on the theoretical definitions and empirical applications of constructs and measures of oral proficiency i.e. CAF.

# 3.2 Objective, research questions and hypotheses

Bearing in mind the relatively incipient pool of empirical experiments in task repetition and immediate repetition more specifically (Lynch and Maclean, 2001; Bygate, 2001; Bygate and Samuda, 2005, D'Ely 2006, Ahmadian and Tavakoli 2010), the objective of the present study, within the framework of task-based Approach (TBA) with a focus on Integrative Planning is: to investigate the extent to which immediate repetition of a task affects students' (task performers) speech, in terms of *fluency, accuracy, and complexity*. The achievement of this objective, may allow for a deeper understanding of how immediate repetition of a production task, in a classroom setting, affects proficiency across the three theorized constructions of oral performance.

Considering the aforementioned objective, I seek to answer one research question further divided into three, as mentioned in the introduction. They are:

RQ1: Does immediate repetition impact participants' oral performance? RQ1a: If so, to what extent does it impact students' fluent oral performance?

RQ1b: If so, to what extent does it impact students' accurate oral performance?

RQ1c: If so, to what extent does it impact students' complex oral performance?

Based on previous empirical studies on the issue of task repetition (Lynch and Maclean, 2000, 2001; Bygate, 2001b; D'Ely and Fortkamp, 2003; D'Ely, 2004, D'Ely, 2006; Ahmadian and Tavakoli 2010) the following hypotheses have been formulated:

H1: Immediate repetition of an oral task enactment will allow performers to integrate experience acquired through performance to performance itself resulting in an increase in fluency (measured as speech rate unpruned, pruned, and number of self-repairs) and/or accuracy (in terms of number of errors per c-unit, and error-free performance) and/or complexity (measured as clauses per c-unit, words

per c-unit, and words per clause).

H2: Evidence of a trade-off effect may be found as immediate repetition (as well as delayed repetition) may favor fluency and complexity at the expense of accuracy.

## 3.3 Context of Investigation

Task implementation for data collection in the present investigation was conducted at the *Universidade Federal de Santa Catarina*(UFSC) in the city of Florianópolis, Brazil. In order to better elucidate the setting in which the study was conducted, this section will offer an overview of the university and the program from which the participants were selected.

UFSC offers its students 103 undergraduate programs distributed among its main campus in Florianópolis and its four secondary campuses in the cities of Joinvile, Blumenau, Curitibanos and Araranguá; all in the state of Santa Catarina. As of the time of this writing UFSC has over thirty-five thousand students enrolled in its numerous undergraduate programs and another seven thousands graduate candidates to its 133 Research Master's, Doctorate and Post-doctorate programs (Estrutura UFSC).

The participants selected for this piece of research were all undergraduate students majoring in English (Linguistics and Literature) (LetrasInglês). The English undergraduate program at UFSC is part of the Department of Foreign Languages and Literature (Departamento de Língua e LiteraturaEstrangeira) and it receives forty new students per year. This four-year program is subdivided into eight terms (semesters) throughout which the students, besides being taught the language with a focus on its academic register, are exposed to theory and research in the fields of Linguistics, Applied Linguistics (with a focus on Second Language Acquisition and Language Teaching), Discourse Analysis, Translation Studies, Cultural Studies, English Language Literature, and Film Studies.

Language disciplines are offered in each of the semesters that compose the program, and up until the seventh semester are divided into comprehension and production of oral English, and comprehension and production of written English. From the sixth semester on the focus of the (language) disciplines switches from the language itself, to topics such as language teaching, academic writing, and discourse analysis. Two of the disciplines, which compose the first phase of the program

(prior to the sixth semester), are English V: written and oral. The latter has a focus on the development of speaking and listening skills with an eye to theoretical and empirical matters permeating the teaching and learning of the language. The cycle of tasks, which ended with the poster presentation task analyzed in this piece of research, was employed by Prof. Dr. Raquel D'Ely as a teaching, research, and assessment tool in the discipline *Comprehension and Production of Oral English V* constituting its *PCC*. The *PCC* (Practice as a Curricular Component) is a requirement for some of the courses in the program and consists of a project through which students experiment more practical academic goals, which in this case was to engage learners in a research experience culminating in the poster presentation session.

As it has been standardized by the program, students enrolled in the language disciplines of the fifth semester (having completed the ones up until the fourth semester) are expected to have achieved level of proficiency equivalent to that of the *Independent User* (B1 or B2) according to the Common European Framework of Reference (Council of Europe, 2001). For that reason, even though the wide range of contextual and personal differences might result in a relative multi-level class, considering issues related to time constraint, the common language threshold for students to enter the fifth semester, and the fact that language data in this study is a result of a genuine classroom procedure applying a proficiency test would be out of the scope of the present study.

# 3.4 Overall research design

Having laid the contextual foundation of the research, I now turn to outlining the study: the overall design of this piece of research consisted of recording the participants' presentations of posters as they repeated them consecutively to different audience members and posteriorly applying questionnaires inquiring participants about their impressions of the task performed in each round of presentation. The speech produced by the participants in their presentations was then, the object under investigation, supported by the impressions reported in the questionnaires. As previously stated in section 1.1, fourteen participants integrated the study. They were all students of the English undergraduate program at UFSC who were attending the discipline of *Comprehension and Production of Oral English V*. During the semester the students were engaged on a cycle of tasks designed and led by the

teacher of the discipline, Prof. Dr. Raquel D'Ely<sup>3</sup>. At the end of the cycle, the findings for the small-scale studies the students conducted during the cycle were outlined in posters that were presented by means of the implementation of the present investigation design. Therefore, the posters used in the presentation task designed by me (inspired by Lynch and Maclean's poster carousel (2001)) were the results of the studies the participants conducted during the cycle of tasks that occurred throughout the semester, prior to this investigation. The course plan of the discipline *Comprehension and Production of Oral English V*, including its theoretical and empirical content, main objectives, and methodology (as designed by professor D'Ely) can be better appreciated in Appendix B (in Portuguese). In addition, the detailed course plan including schedule, main themes approached by module, and the activities performed in each module can be found in Appendix C.

The theme of the task cycle was the many beliefs held by learners about the process of teaching and learning English as a foreign language. The beliefs ranged from quality and effectiveness of distinct teaching approaches to the influence posed on second language learning by different learning contexts and learners' backgrounds. The ultimate pedagogical goal of the cycle was to empower students to move away from myths and towards science while building informed opinions meant to guide their practices as future language teachers.

The tasks included the reading and writing of summaries on theoretical and empirical studies on the construct of 'beliefs'; recording and sharing an audio narrative reporting students' own personal teaching and learning experiences; writing a short essay on their learning and teaching experiences; taking a survey and discussing the characteristics of a good language learner; and interviewing peers and active professionals of the language teaching market (teachers of private and public schools, of language centers, and school owners). Prints of the Moodle pedagogical platform used as support for the discipline with the list of tasks included in the cycle, as well as professor D'Ely's instructional guidelines for each assignment can be seen (in their original language, Portugues) in Appendix D. Additionally, prior to the beginning of the cycle of tasks and in order to collaboratively carry out the many steps it consisted of, the students were divided into groups of three (except for one group of four) and the teams remained unchanged

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<sup>&</sup>lt;sup>3</sup>Professor D'Ely is the advisor of this study, and kindly agreed to let me make her students participants in my investigation of the effects of immediate repetition.

until the very last task: the resulting poster presentations where students outlined their findings as well as their academic maturation in what regards beliefs. Prints of the Moodle page with step-by-step instructions to the writing of the final essay and the poster presentations, posted by professor D'Ely, can be found in Appendix E.

It is of paramount importance, however, to remark here, that neither the cycle of tasks nor the final essay (the small-scale study) were part of this investigation. Aside from endowing the participants with familiarity with the theme (whose effects on speech production during the presentations were disregarded on the grounds that the first of the three presentations would serve as basis for the analysis of the subsequent ones, irrespective of the conceptual background of the participants prior to the first enactment), and providing content for the posters and delivered talks, the cycle had no direct bearings on the study here described. Moreover, I had no contact with the students during the semester or say in any of the activities that the cycle comprised, with the exception of the final poster presentation which was then (in cooperation with Professor D'Ely) implemented by this researcher along with the post-task questionnaires applied to investigate participants impressions of the task and of their performance during its enactment. The mechanics of the poster presentation will be further explained in section 3.6.1 (Task for eliciting speech data: poster presentation), and the questionnaires will be presented and discussed in the following section (The post-task questionnaire, 3.6.2).

At the first moment of this study, then, each group of participants repeated their presentations three times consecutively to three different audience groups composed of the other students in their class. Their presentations were recorded so as speech could be posteriorly transcribed and analyzed. Due to structural limitations of the environment and a lack of funding for equipment purchase or rental for research at Master's level, which made the use of individual microphones impractical, the presentations were filmed using a single camera. Once this piece of research is solely concerned with the audio records, participants had been previously assured that all video data would be summarily discarded after transcription of their speeches. Finally, the questionnaires were handed in to each student right upon concluding the final round of presentations.

## 3.5 Participants

The fourteen participants selected for this study, as mentioned in the preceding sections, were all undergraduate students majoring in English (LetrasInglês) at UFSC, who had been attending the discipline Comprehension and Production of Oral English V.Initially, this class was composed of forty students (who were expected to remain enrolled for the semester, and then, potentially take part in the poster presentations to be implemented at the end). Student evasion added of other issues (many of a personal nature) reduced the pool of participants to the nineteen that took part on the presentation task. Of these, the number was further reduced as I realized, during data collection (and later at the segmentation stage), that one important variant had missed my manipulation and some participants (five, to be precise) were 'taking advantage' of their own posters to read whole segments of their speech from. Since the interference of data that was not produced by the participants on their own ability would oppose the very purpose of the study (to asses performance and derive assumptions about the cognitive processes underlying L2 speech production), all the five participants who read chunks of their talk were removed from the analysis, resulting in the present total of fourteen participants (42 speech samples). A figure that may allow for a minute view of mental mechanisms of speech production found before to have taken place in similar contexts. Additionally, and rather coincidently, the study that inspires this one was also composed of fourteen participants, although, as mentioned in section (2.4.1) Lynch and Maclean focused on a case-by-case analysis of their data.

All participants were native speakers of Brazilian Portuguese who had been studying English as a second language for an average of 9.05 years with as little as 2.5 years (Participant P#3) and as much as 15 (Participant P#8). With the exception of one participant, P#7, who asserted he had never studied English in a structured setting before, bud had indeed had contact with the language for almost 15 years. Additionally, the participants' ages ranged from 17 (Participant P#11) to 48 (Participant P#9), with a mean of 24.5 years.

Given the aforementioned parameters and standards of the English Letters Program at UFSC all participants were expected to have an intermediate to upper-intermediate level of proficiency (CEFR B1 or B2). In spite of the noteworthy discrepancy in the amount of time participants asserted to have spent studying English, the leveling system

of the English Program guarantees a relative consonance of students' proficiency. Therefore (and grounded on the institutionalized level selection at the English program) the variable 'language proficiency' has not been controlled, in this study, by means of a proficiency test.

Moreover, following the research tradition in oral production studies within a TBLT perspective (Dely, 2006; Guara-Tavares, 2008; Ortega, 1999; Foster and Skehan, 1996; Mehrnet, 1998), the participants of the present study can be said to be at an intermediate level of proficiency, a fact that better enables a desirable comparison among different research results.

Finally, consent forms (Appendix F) were signed by the participants allowing this study to make use of the data they produced. Numbers preceded of a number sign (#) have been assigned by the researcher to each participant in order to ensure anonymity.

#### 3.6 Instruments for data collection

## 3.6.1 Task for eliciting speech data: poster presentation

The task employed for eliciting the speech data analyzed in this study (as mentioned in section 2.4.1) was a *poster carousel*. The procedure consists of the repeated presentations of the content of previously devised and designed posters. In this section I further explore the functioning and the purpose of the carousel.

Ortega (2013) asserts that interlanguage researchers (based partially on language psychology and information processing) believe that the extraction of patterns from linguistic data is processed by the same cognitive mechanisms that aid in any other kinds of learning. In order to try to access such mechanisms, free-production data (along with experiment-elucidated data) is valued because it "offers a window into ability for use in real time and across communicative contexts, and such a focus is particularly useful when investigating development" (p. 111). The data collected in this study, once elicited in a real classroom situation, consists of freely-produced data, once the task employed allowed the participants enough freedom to build his own speech with its own structure.

Under professor Raquel's guidance, the participants of the present study engaged in a small scale study on beliefs about L2 learning, which was further summarized in a poster which, then, resulted

in a series of oral presentations which were inspired by the poster carousel task employed by Lynch and Maclean (2001). The poster presentations took place at the end of the fifth semester of the English Program. The carousel was the last moment of a cycle of tasks implemented at the course of *Comprehension and Production of Oral English V*, as previously stated. Hence, the presentations constituted the communicative task employed to elicit speech data from the students. The posters were designed with a three-fold purpose of (1) laying out the findings and conclusions the participants had arrived at regarding beliefs on L2 learning; (2) serving as a graded component of the discipline, and (3) enabling this researcher to investigate the effects of immediate repetition.

This 'carousel' of poster presentations is significant and pertinent within an academic context for its resemblance to real-life academic events. Two such events that are part of the academic life of the participants and which were mentioned as to motivate the students towards the task are SEPEX<sup>4</sup> and SemanaAcadêmica de Letras<sup>5</sup> at UFSC, where researchers or congress attendants can expose the findings of their studies to an ample audience without demanding the dedicated time, space and structure a talk, a round table, or a symposium would require. For that reason, poster presentations are popular and welcome in larger academic gatherings, and students can only benefit from classroom practices which aim at preparing them for such circumstances.

Moreover, the poster-presentation task elicits the production of life-like language in a verisimilar communicative context where the focus lays heavily on content rather than form. That is in complete accordance with the definitions of task that guide this study as Ellis (2003, p. 16) remarks that "a task is intended to result in language use that bears a resemblance, direct or indirect, to the way language is used in the real world", and Skehan (1996a p. 25) asserts that a task is an

<sup>&</sup>lt;sup>4</sup>SEPEX (Teaching, Research, and Extension Week) is a yearly scientific exposition at UFSC where graduate and undergraduate students, research groups, and laboratories of the university present and promote projects and research results in all areas - mostly through poster presentations - to over 50 thousand people in and out of the academic community.

<sup>&</sup>lt;sup>5</sup>The *Academic Week of Letters* is a small-scale SEPEX-like event promoted by the Department of Foreign Languages and Literature and the Department of Vernacular Language and Literature where topics concerning the Letters Programs are presented and debated by students, professors, and guest lecturers.

activity in which "there is some sort of relationship to the real world".

In the poster presentation event, the pre-established groups of three students (which for the purpose of clarification, will be referred to here as host groups) took turns presenting the contents of their posters to the remainder of students who were, in turn, divided into three 'attendance' groups. Even though the host groups remained the same throughout the task, the attendance groups were chosen at random, as there was no dialogical interaction between attendants and hosts. The purpose of separating the students into different attendance groups, besides that of mimicking a poster session event and justifying the repetition of the presentations, was to allow the students to (after the task) exchange information about the different presentations they attended. This post-task discussion, although attended by this researcher, was meant to complete the task in its real academic setting. The topic of discussion was the content of the presentations. Performance was not debated, and the discussion does not integrate this study.

During the presentation task analyzed, each new attendance group to come into the classroom required a new mini-lecture about the contents exposed on the poster by the members of the host groups. As a result, each host group had to present their poster three times (for each of the three attendance groups composed of different participants each time), resulting in three repeated speech sets by each participant.

Once the cycle of tasks that resulted in the poster had been undertaken by groups composed of the same students, when preestablishing the content allotted to each member and the order of presentation within the group, it was asked that participants kept the same order throughout the three enactments so as to ensure that each speaker would repeat the exact same content three times consecutively.

Although the organization of the content was left up to the participants, the five groups delivered similarly structured presentations. The subsections presented by each participant were similar across groups, and followed a rather formulaic pattern that mimicked that of academic presentations with the first participant being responsible for the introduction (contextualization), the second communicating the discussion of findings, and the third closed the round with conclusions and final remarks.

Furthermore, it is valid to remark here that some extent of planning and rehearsal is bound to have taken place prior to the poster presentations. It is plausible to assume (for some participants more than others) that students practiced their presentations independently so as to

ensure that correct content would be conveyed once the presentations (which happened in a real classroom context) were part of the evaluation of the discipline Comprehension and Production of Oral English V. In addition, the cycle of tasks that preceded the presentations may have contributed to familiarizing students with content and jargon - fostering processes of conceptualization and formulation and serving as a type of pre-task planning that was likely to have influenced participants' performances in the presentation. Notwithstanding this, the study aims at investigating the effects of Integrative Planning on oral production during task enactment in a real classroom setting, and performances will be compared against each other, within participants, regardless of external factors, that is, as much as they might have rehearsed, each first presentation by each participant served as basis for comparison much in the same way that a control group would. Thus, bearing in mind that pre-task planning and rehearsal are out of the scope of this study, these variables have not been controlled.

Moreover, besides being inserted in a real classroom context, with a purposeful communicative outcome, the presentations can be considered monological tasks. That is to say that even though the host groups were composed of more than one participant, dialogical interaction was not required for the task to be enacted, and each presenter was responsible to deliver their own subdivision of content. That the speech-eliciting task was monological was essential to the objectives of the study (see Freed, 1995; Lennon, 1990; and Fortkamp, 2000, for instance), once direct interaction or co-construction of speech could further intervene in each participant's oral outcome and potentially undermine the scrutiny of a possible variance in accuracy and fluency. In addition, once the task served a primary academic classroom purpose, its being monological was desirable if taken into consideration Bygate's (1999, p. 206) assertion that such tasks evoke "linguistically denser talk".

Furthermore, for the reason mentioned in section 3.4 (overall research design) a film camera was used to record all presentations. The camera was pointed at the students' who, in turn, spoke standing next to their poster, facing the renewing attendance groups. Even though video material was produced during the filming, participants were made aware that the study was exclusively interested in the audio records, and that the filming should be disregarded as no image data would be used at any point in this investigation. Although the presence of the camera may have been an undermining factor to their speech production, the tension

produced by it may have brought the task closer to congress environments were scrutiny by the public may generate some level of anxiety.

The speeches produced by the students and collected through filming of the poster presentations constitute the main object of scrutiny of this research. They have been transcribed and annotated so as the three dependent variables (fluency, accuracy, and complexity) could be measured and contrasted with themselves at the three moments each participant presented.

## 3.6.2 The post-task questionnaire

The second instrument used in this study to elicit data from participants was a post-task questionnaire asking the learners to express their impressions of the task enacted and of their own performance in each round of presentation (in terms of content conveyed and language choices made) (see the questionnaire in Appendix G). The idea behind the post-task questionnaire was that of shedding light upon the results to be derived from the speech data, so that more insightful conclusions could be drawn about the effects of immediate repetition on learners oral performance. In that sense, the post-task questionnaires employed in the present study would function as a modest window into the participants' minds at (or recollections of) the moment they were engaged in performing the repeated presentations. Having a look at what learners felt about the task and their speech production will allow this researcher to better understand the data elicited and the results arrived at during data treatment and analysis.

The post-task questionnaire was written and answered in Portuguese. The choice of keeping it in the students' native language was taken bearing in mind that, once the participants of the study are intermediate-level EFL learners, complete understanding of the questions asked and directions given as well as full liberty for expression could only be ensured by using a language the participants are fluent in, and comfortable with. Consequently, all questionnaire excerpts used as examples in the data analysis chapter will have been translated into English by me (original responses to the questionnaire in Portuguese can be found in Appendix H).

The questionnaire was handed to the participants of each group immediately after the group finished the third (and last) round of presentations. Participants took from 10 to 20 minutes answering the

questionnaires before they could return to the class an serve as members of the rotating audience for their peers' presentations.

The questionnaire provided the participant with as little information as feasible to collect the qualitative data needed, without compromising the tool's validity by influencing students responses. A brief introduction was included stating that the questionnaire's purpose was to allow the researcher to better understand the context of the participants' learning of English as a foreign language and their perception and opinions about the oral production task they engaged on.

Two questionnaire was composed of two main questions. The first aimed at eliciting participants' perception or impressions of the poster carousel: "How did you perceive, or what were your impressions of the task of presenting your poster?" (See questionnaire in Appendix G). With this question I meant to have an overview of how the task was received as a whole. The second, was a more focused three-part exercise telling the participant to describe in detail how they felt (in terms of performance) about each one of the three rounds of presentations separately: "You repeated the presentation task. Weave a comment (with as much detail as possible) about how you felt in each presentation in relation to conveyed content and your language choices". Separate space was allowed for the participants to register their comments on each round of presentations. Moreover, It is important to highlight that students were asked to comment on each round separately, so that variation (and possibly improvement) in their self-assessment from round 1 through to round 3 could be observed and compared to that found in the speech data collected and in the results produced by the eight measures of proficiency investigated.

# 3.7 Procedures for data transcription

Speech samples elicited from participants were filmed (video data was disregarded), transcribed verbatim (every word and sound on the recordings was typed out, including non-lexical fillers such as "ahn" and "ah"), and double-checked. The procedure utilized in transcription was+based on D'Ely (2006) who adapted them from (Foster et al., 2002; Van Lier, 1988; and Johnson, 1995). The process of translating the audio text into written language involved re-listening to each speech several times, in different occasions, so that transcriptions would be faithful and problematic sounds could be understood. This process yielded a general

file with all transcriptions that was then duplicated for segmentation into each of the units needed to apply the eight measures of performance discussed in section 2.5. They were: unpruned words, pruned words, self-repairs, clauses, c-units, and errors. Data treatment for each of these segments will be explained in detail in the next sections along with the mechanisms established for each measure upon which the segmentation phase relied.

## 3.8 Measures of speech production & data segmentation

## **3.8.1 Fluency**

Foster and Skehan (1996) understand fluency as a temporal phenomenon, that is, one that relates the amount of uttered speech to the time taken to produce it, or in their words as "reflecting the capacity to cope with real time communication" (2006, p. 103). D'Ely (2006) drawing on Tavakoli and Skehan (2005), however, points out to the multifaceted nature of fluency and asserts that at least three sub-dimensions of fluency can be investigated in order to properly unveil the subtleties involved in the production of fluent speech – they are: breakdown fluency, repair fluency, and speed.

Breakdown fluency refers to the amount of pausing time between lexical units. These pauses can be filled with non-lexical units (fillers such as 'ahn', 'ehn', or 'ah') or even unfilled, that is, moments of total silence (except for those for rhetorical purposes). Breakdown fluency can be operationalized by adding up the total amount of paused time in a speech, or by calculating the quantity of pauses in relation to the number of c-units (communication units) uttered (D'Ely, 2006). Repair fluency, in turn, refers to restatements and self-corrections done by the speakers through the act of talking. D'Ely operationalizes this dimension in terms of total number of self-repairs per c-units. According to her, Self-repairs may include reformulations (repetition of units with some modification), replacements (replacement of lexical items for others immediately after their utterance), false starts (the abandonment of a sentence before its completion either for rephrasing, or for a complete change of idea), and verbatim repetitions (repetition of words, phrases, or clauses with no modification in their syntax or morphology).

Nevertheless, due to the space constraints, I have looked more systematically at the 'speed' and 'repair' dimensions of fluency. Which is to say that fluency has been dealt with in terms of the speed at what

speakers produce speech and how unobstructed by repairs that speech was. For that purpose, fluency has been operationalized in this study into three measures: (1) Speech Rate Unpruned(Lennon, 1990; Ortega, 1999; Mota, 2003; D'Ely, 2006), which according to Mota (2003) is "a more general measure that is assumed to reflect the relationship of articulation to silence" (p. 77) is "calculated by dividing the total number of semantic units (complete and partial words), including repetitions, by the total amount of time (in seconds) participants took to perform orally" (D'Ely 2006, p. 104); (2) Speech Rate Pruned (Lennon, 1990; Ortega, 1999; Mota, 2003; D'Ely, 2006) which, on the other hand, is a more meticulous measure of fluency "that reflects a more straightforward expression of ideas and unimpeded articulation of words" (Mota 2003, p. 77) is calculated by dividing the total number of semantic units (complete and partial words), excluding repeated and repaired units with the exception of those done so for rhetorical effects, by the total amount of time (in seconds) participants took to perform orally (D'Ely 2006, p.104; Mota 2003, p.77). The quotient of the division in both unpruned and pruned speech rate is multiplied by 60, in order to arrive at the rate of words per minute produced by the speaker. Contractions are considered as one word in both counts. Finally, as mentioned in section 2.3 (oral language processing) the natural occurrence of online planning due to time being a crucial factor in production results in hesitations, pauses, and reformulations. This has shed some light on the features of fluency that should be considered in assessing learners' speaking skill. Therefore(3) Number of Self-repairs by C-unit was also included in the study. The number of self-repairs is calculated by dividing the total number of self-repairs (collapsing reformulations, replacements, false starts and verbatim repetitions) by the number of c-units. The c-unit was introduced in section 2.5.1 and its segmentation will be further explored in section 3.8.2.4 along with clause segmentation and error count.

The two rates of words per minute and the number of self-repairs by c-unit in each of the three enactments of the presentations performed by each student were compared within participants so that the researcher could quantify the expected improvement in fluency through a measurable improvement in said measures.

# 3.8.1.1 Segmentation of unpruned words

For the unpruned count, all semantic units and fragments were

kept with the exception of non-lexical fillers ("ahn", "ah", "ehn", "eh"), which means that partial words are counted as words. The examples: preserve their iden. Identities (P#4 round 2), and because is in. ins. Insufficient (P#5 round 1) counted as 4 words and 5 words respectively. To proceed with word count I deleted all glossing and fillers, from the first transcribed file. Next I highlighted all partial words and sounds that resembled words to crosscheck with references and to seek a criterion for treating them. Finally, I kept the occurrences judged to be word fragments and deleted the remainder as indistinguishable noise and fillers.

Following (Fortkamp, 2000; Mota, 2003; and Bei, 2010) partial words were defined as fragments composed of a consonant added of a vowel that enabled comprehension of the intended meaning. Based on the implications of this definition and seeking consistency, I considered it appropriate to establish as a criterion counting the following two cases as partial words as well: (1) two or more letter clusters, even if composed of consonants (if the intended meaning was apparent), as in the example: *the three of us sp. spoke* (P#13 round 3 – 6 unpruned words); (2) one-vowel sounds preceded of reformulation into two-letter words, once the uttered sound constituted half of the reformulated outcome, example: *so i. it happened* (P#9 round 3 – 4 unpruned words).

Thus, the decisions on whether or not the sound was considered a partial word were made based on the word that followed the fragment. That decision was valid even in cases where the final repair was not exactly the same as the partial word. Provided the intended meaning was apparent in the context, the word was considered in unpruned count, for example: wa. were the (P#3 round 3) counted as 3 words, since "wa" - as the repair "were" suggests - was a false start on the singular form of the same verb "was". Similarly but sh. he adds (P#5 round 1) counted as 4 unpruned words.

Moreover, words and expressions in Portuguese were not counted as lexical items unless they were preferably-non-translatable or proper names. Therefore, mentions of the name of the university or course were counted, as in the examples *Universidade Federal de Santa Catarina* and *Letras course* (P#2 round 2) that were counted as five and two words respectively. However the occurrence "teste de nivelamento" (same participant) counted as zero words for it is commonly translated (with no harm to culture-specific items) to "placement test".

Finally, compounds words counted as two separate words. Words were counted manually and with *Microsoft Word* and *Google Docs* 

embedded word count tools. Every step of the segmentation was rechecked several times by the researcher. Example transcriptions of participant unpruned speeches can be found in Appendix I.

# 3.8.1.2 Segmentation of pruned words

Not unlike the unpruned segmentation, counting of pruned words also required the adoption of a set of criteria aiming at coherence with the literature and an accurate analysis of the data. After the whole file was reread for immediately repeated terms and partial words (that were deleted) these criteria were checked against the said problematic instances and applied throughout the data, serving as consistent problem-solving parameters.

First, non-immediate repetitions of the words in a phrase (Lenon, 1990; Bei, 2010) were eliminated from the count. In this example from participant P#1, round 1 the guided quest.thethe guided questions 3 words were counted for the guided questions and the guided quest. the was removed from the file. That is to say, only the words that convey novel meaning were kept in the file. In cases like participant P#2 round 1 will never be profi. will be proficient textual coherence was taken into account to choose which words the participant intended to say, thus will never be proficient (4 words) was the construction kept in the file.

Moreover, reformulations were not kept in the pruned count. In this example by P#13 round 1 *our average mean age is thirty-two* the reformulated word *average* was discarded. False-starts and pseudo lexical fillers ("so", "like", "you know") were also disregarded, as in the example by P#7, round 1: *and the so we found a few results* both the false start *and the* and the filler *so* were excluded from the count. On the other hand, phrases repeated, slightly repeated or replaced for rhetorical purposes were computed in this count, and the example: *a common belief related to practice the importance of practice* by P#11 round 1, was left intact.

# 3.8.1.3 Self-repairs count

The count for the third measure, number of self-repairs, followed procedures that derived from segmentation of the previous measures. First, all identified instances of self-repair (including reformulations, replacements, false starts, and verbatim repetitions) were marked and identified as of type before being removed from the pruned file.

Posteriorly the final pruned text was compared to the original unpruned with an online text difference checker <sup>6</sup>so the deleted self-repairs could be rechecked.

Additionally, the following criteria were adopted: partial words (that were corrected) have been considered self-repairs. Example: P#2 round 3 "i." was repaired into "in". Chains of repaired units resulting in the same outcome (final right or wrong construct) were counted as one repair.For example, in:we we collected from we collected our data from (P#1 round 1) only one self-repair was tallied since "we we collected from" was entirely repaired. However, if a chain of repairs resulted in two different outcomes (intersected by a novel item), it then counts as two repairs. In the example by P#7 round 1: special motivations to..to.. enter join the theLetras course, three repairs were counted, as "to" counted as a repetition, "enter" counted as a replacement, and "the" as another repetition. Following the criterion "join" was considered the outcome of "enter" alone and the repair of the first "to" is the second "to". Therefore the number of computed self-repairs reflects on the number of outcomes to each group of reformulations. The only seeming exception for that parameter were the occurrences of, abandoned constructions, which were never repaired but rather abandoned after attempts at correction, example: on our method session we... this is a qualitative study (P#13 round 1). These cases have also been considered in repair fluency count as I understand them as replacements, the new construction replacing the abandoned one. Thus, in the example above "on our method session we" was considered one repaired unit.

Example transcriptions for both pruned words and self-repairs can be found in Appendix J.

# 3.8.2 Accuracy

As previously mentioned, accuracy is very commonly accounted for when assessing proficiency (Bygate, 2001; D'Ely and Fortkamp, 2003; D'Ely, 2004; Tavakoli and Skehan, 2005; D'Ely 2006, to mention a few). Aditionally, Foster and Skehan (1996, p.303) assert that accuracy, while concerning form (grammar and lexis), focuses on error-free performance. In the present investigation, thus, accuracy has been assessed in order to report the evolution of participants' speech through repetition in what concerns its consonance with the grammatical use of

<sup>&</sup>lt;sup>6</sup>https://www.diffchecker.com/diff

the language. In task-based research it has been often assessed by two different indices: number of errors by t-units, c-units, or per 100 words or percentage of error-free clauses (D'Ely 2006 p. 65). Moreover D'Ely highlights that a study of exploratory nature should benefit from analysis through both indices. Therefore both *number of errors per c-unit* and *percentage of error-free clauses* (Foster and Skehan 1996) were employed in this study. The former is the quotient of the total number of errors found in the speech by the total number of c-units, the latter is found in the number of error free-clauses divided by the total number of clauses multiplied by 100.

Additionally, given the fact that the measures employed in this research rely on the presence of errors, it is important to point out that errors have been understood here - as often formally defined - as "any deviation from the English grammar norm in terms of syntax, morphology and lexical choice" (D'Ely, 2006 p.110).

It is, however, essential to signalize here that once the original data produced by the students was oral speech, deviations in pronunciation which did not result in communication breakdown - that is, mispronunciations that did not result in alterations in the content of the conveyed message - were not accounted for as errors: P#3 round 1 occurrence [dʒɪs] when used to mean "this" (/ðɪs/) was not computed as a mistake.

Furthermore, grammar deviations that underwent self-repair by the participants (through reformulations, replacements, and false-starts) were not considered errors when the outcome of the repair was grammatical. In the example by P#14 round 3, *they were somehow effective and ahn because we can communicate in English*, "and" was not considered a mistake once it was repaired into "because".

#### 3.8.2.1 Grammatical error count

After transcription, the grammatical accuracy of the samples was appraised. The first step was tracing grammatical errors. All occurrences were highlighted and added of notes defining the nature of the mistake and proposing an accurate solution. Next, debatable constructions were flagged for future comparison against the rater's appraisal (section 3.8.2.3) and for further checking against grammars. Quirk and Greenbaum (1973) and Murphy (2012) were used as reference for final grammatical corrections. Given the (oral, presentation) nature of the task, and the variability of different "world"

Englishes" expressions and word orders that are less common but acceptable (as helped us to be aware of, P#9 round 1) were not computed as mistakes.

Some problems reoccurred throughout the presentations. For these after grammar was consulted a brief set of criteria was devised and reapplied to all speeches. First, the unclear use of reference mechanisms consisted of error when ambiguous or the particle is too far from the referent so that it loses sense in the context, as in the following example: they startedly.with this this beliefs and this can influence positively or negatively this (P#3 round 1). The last demonstrative pronoun "this" was computed as mistake. Although slips of pronunciation were disregarded in error segmentation, errors in morphology also counted as mistake, as in the example by P#3 the construction "startedly" was considered an error. Moreover, P#3's (rounds 1, 2 and 3) mispronounced [dʒɪs] has been counted as error when followed by a plural noun, however, when she meant "this" (and it was followed by a singular or uncountable noun) the word was not registered as an error, but a slip in pronunciation).

In addition, when an erroneous construction was repeated or repaired into yet another error, the occurrence counted as one mistake, since repair mechanisms are being disregarded in the error counts, example: that is the fact that foreign. foreigns. will never be (P#2 round 1) where "foreign foreigns" (intended "foreigners") was tallied as one mistake.

It is valid to remind here that since the two complementary accuracy measures employed do not consider repaired instances of errors, they operationalize means of unrealized mistakes rather than mistakes produced. In a sense, perhaps, it could be argued that these measures of accuracy are also dealing with the concept of competence besides performance once they credit the speaker with monitoring.

See Appendix K for example transcriptions with error count.

# 3.8.2.2 Segmentation of clauses

Another segment used in the accuracy assessment was clauses. Segmentation of clauses was rather significant in this study both for its independent use in three of the eight measures used in this investigation (percentage of error-free clauses, number of clauses per c-unit, and mean length of clause) and for being the defining components of the c-unit. And along with words, errors, repairs and c-units segmentation (the

latter is discussed following) was done in obedience to the precepts established by the measures found in the literature (section 2.5) having the coherence of the overall study in mind.

The elements that were considered clauses (as per Mehnert 1998, p. 90 and Quirk and Greenbaum1973) were independent clauses, finite and nonfinite dependent clauses, coordinate clauses with subject or finite verb deletion, verbless clauses, and infinitive constructions. Aditionally, zero subordinating conjunctions were considered and subordination was credited.

#### 3.8.2.3 External Rater

In order to guarantee a trustworthy analysis of grammatical accuracy and clause segmentation, an expert colleague was invited to rate the transcriptions. The rater was given the raw transcriptions (first file, no glossing or deletions) for all forty-two speeches to perform an error count and description. No rating scales were used. Instead, the rater made her own independent appraisal of errors and clauses, which was then compared to the ones made by me. Cases where disagreement was found were decided with further support by the literature (Quirk and Greenbaum, 1973; Murphy, 2012). Examples of rater appraisal can be found in Appendix L.

# 3.8.2.4 Segmentation of C-Units

The c-unit defined by the salt database as consisting of "an independent clause with its modifiers" was (for the reasons mentioned in section 2.5)the segmentation unit chosen to be employed in measures of the three dimensions (CAF) from which each of the dependent variables stem. Segmentation of c-units followed the steps listed by the salt-software database (retrieved in February 2016), which in turn were based in Loban (1966), who devised the concept of c-unit.

The prescriptions were followed strictly, to the best of my ability, so transcriptions could be comparable to the salt database, and thus, generalizable. Therefore, the following recommendations were observed: tags such as "you know", "I guess", and "I mean" were not segmented as new c-units. For example, P#8 round 1 *ahn that was because you know two people from our group* counted as one c-unit. Grammatical errors were also ignored when segmenting the utterances. In this examples by P#2 round 1: *the role of self-confidence plays*, the wrong

"of" was ignored and subordination was credited for "of (intended that) self-confidence plays". Moreover, since the c-unit is a segment meant to enable the evaluation of spoken language, issues such as pauses and intonation, which are intrinsic to the medium, could not have been ignored so there have been cases where intonation ending contour (falling in statements and rising in questions) and long pauses prevailed over independent clause/dependent clauses association, but since the cunit has a grammar based definition whenever appropriate grammar was favored in the segmentation. Similarly, sentence fragments were counted as separate C-units when the final intonation contour of the utterance indicated that a complete thought had been spoken. The following example by P#3 round 3 was separated into two c-units: C: ok now C: based conclusion ahn onthese activities perceive. Additionally, in accordance with the previous measures and segmentation steps adopted and described before, repaired constructions have not been counted as c-units, whereas rhetorically repeated or slighty modified occurrences have. Examples of c-unit and clause segmentation can be found in Appendix M.

## 3.8.3 Complexity

Complexity is understood in this study as a quality of language that is more elaborately produced and which mirrors a greater variety of syntactic patterning, being then, more closely related to a risk-taking attitude from the speaker than to a conservative view on how to use the language (Foster and Skehan, 1996, p. 303). I ought to highlight, however, that only syntactic complexity will be investigated as is the trend in task-based research (Bygate, 2001; D'Ely, 2004; D'Ely, 2006). Additionally, Ortega (2013 pg. 10) underscores that even though in order to become a competent speaker of an L2 dimensions such as phonology, vocabulary and discourse must be learned, "thus far, SLA efforts have been most persistent and most fruitful in the L2 areas of morphology and syntax".

Foster and Skehan (1996) concurred in subordination being considered satisfactory as a measure to assess complexity, and indeed many studies (Housen and Kuiken, 2009) have been conducted where syntactic complexity was assessed only by means of subordination, very often including different (and arguably redundant (Norris and Ortega 2009, p. 560)) measures of subordination. However, Norris and Ortega (2009) and Pallotti (2009) agree that syntactic complexity by means of

subordination may not increase linearly (Housen and Kuiken 2009 p.470). As a result, Norris and Ortega (2009, p. 566) advocate for a multidimensional analysis of complexity considering that a decrease in subordination may indicate an increase in the overall complexity and as assumed by Ortega and noted by Palotti "more complex' does not necessarily mean 'better'" (2003, p.494 in Palloti 2009, p. 598). Therefore Norris and Ortega (2009, p.574) state that in what concerns syntactic complexity SLA researchers should at a minimum measure complexity by (1) subordination (as in number of clauses per unit), (2) global or general complexity (as in number of words per unit), and (3) complexity via phrasal elaboration (mean length of clause). They conclude that "it will be wise to measure all three dimensions of complexity in the same data, and this will require minimally the combined use of one measure from each of the three families in the same study" (p. 556). Thus, following Norris and Ortega's suggestion, three measures of syntactic complexity were employed in this study to produce a more multidimensional analysis of the construct. Regarding complexity by subordination (Foster &Skehan, 1996; Wigglesworth, 1997; Skehan& Foster, 1995; Skehan& Foster, 2005; Bygate, 2001b; Fortkamp, 2000) defined by Quirck and Greenbaum (1973) as "a nonsymmetrical relation, holding between two clauses in such a way that one is constituent part of the other" (p. 309), I adopted the number of clauses per c-unit measure assuming that, since the c-unit is composed of a main clauses and its subordinates, the higher the index, the more subordinated (complex) the speech can be considered. To assess global or general complexity, the number of words per c-unit was computed (Bygate 2001b T-unit; Bei 2010 AS unit) allowing this researcher to investigate variations in the mean length of c-units produced by the speaker. The total number of pruned words was used to calculate this disregarding coherently self-repairs reformulations, non-rhetorical repetitions and replacements).

Finally, to tap into sub-clausal complexity, the *mean length of clause* measure was employed, where the total number of pruned words was divided by the number of clauses produced.

# 3.9 Analysis of data

I adopted two different main treatments in order to mine the data for statistically meaningful results and strengthen my analysis of the results. The first was a descriptive analysis. Descriptive statistics aimed at giving a general overview of all participants' performances across the three presentations (here also referred to as round 1, round 2, and round 3) in the eight measures applied: fluency (speech rate unpruned, speech rate pruned, number of self-repairs), accuracy (number of errors per cunit, percentage of error-free-clauses), and complexity (number of clauses per c-unit, number of words per c-unit, mean length of clause). Descriptive statistics depicts the results for each measure based on the means as well as providing some of the values to assess the fit of the mean (the minimum, the maximum, and the standard deviation) for each presentation.

The second treatment to the data analysis was to perform a General Linear Model (GLM 4) One-way Repeated-Measures ANOVA (Field 2009, p. 458)

Analysis of variance is used to test the null hypothesis that 3 or more means are the same (Field, 2009 pg. 349). In this study the null hypothesis is that there is no effect to proficiency measured as CAF constructs across immediately repeated oral performances.

The Repeated Measures ANOVA (also largely referred to as within-subject ANOVA) correlates scores from the same participants at different testing points (conditions) on the same variables. In this investigation, all 14 participants had the results of their measures (3 for fluency, 2 for accuracy, 3 for complexity) calculated and compared across time points (each of the three presentations). In the context of the investigation, each presentation (round) represents a different testing condition where the previous presentation is expected to provide the subsequent one(s) with some ease of access to content and structure already conceptualized and formulated.

The level of significance was set to p .05 as per consistency with the literature envisioning external validity through a homogenous and consistent quantitative analysis of the data. .05 means that there's is only 5% chance that possible variations in performance happened by chance. Less than that would mean that it is more likely that variation was due to conditions experimental (rejecting the null hypothesis). It might be important to highlight that there have been debates on a possible statistical fallacy concerning the indiscriminate adoption of .05 as significance level, according to (Fisher, 1956 in Field 2009, p. 51) no scientist has an absolute value through which he can judge all findings in all his studies as significant or not. The level of significance should then be subject to the researcher's interpretations and conclusions based on his expectations for the study, prior to data collection. However, as

this study (being original in its assessment of immediate repetition as a metacognitive process) still follows on a vast tradition within TBLT, of empirical investigations supported by the analysis of CAF constructs, as done in most studies the level of significance was set at the one most commonly used in experiments on the field.

In order to guarantee that no two conditions are any more dependent than any other two (that is, Rounds 1 and 2 are no more dependent than Rounds 2 and 3 or Rounds 1 and 3) sphericity was measured. According to Field (2009 pg. 459) When repeated-measures are used "scores taken under different experimental conditions are likely to be related because they come from the same participants", because of that, another assumption is necessary: "that the relationship between pairs of experimental conditions is similar" this supposition is the 'assumption of sphericity'.

SPSS uses The Mauchly's test to verify the hypotheses that variance of the differences between conditions are equal (Field 2009, p. 460). If the test is non-significant (i.e. p > .05) it is plausible to assume that the variances of differences are roughly equal (sphericity can be assumed). For those cases where variance of the difference between treatment levels was not equal (p<.05), sphericity was adjusted using the Greenhouse-Geisser correction. Furthermore, in cases where sphericity was violated, multivariate test statistics (MANOVA) (which don't include the assumption of sphericity) (2009 p.477) were conducted to test the significance of the F ratio. Again, if it's significant (p < .05), differences in (measure) between presentations can be assumed.

When significant difference among means is found a post hoc test was used to determine which of the means differ and to what degree. According to Field "post hoc tests consist of pairwise comparisons that are designed to compare all different combinations of the treatment groups" (2009 p.372). They control the familywise error. The most commonly used method is the Bonferroni correction.

The following chapter will present and discuss the results of the statistical data analysis, as well as offer some insight on particularly relevant individual cases which could not have surfaced in the quantitative analysis. These cases will be discussed in light of the numbers found during data segmentation and the responses collected via the post-task questionnaires.

## 4. Data Analysis And Discussion

#### 4.1 Introduction

This chapter aims at presenting and discussing the results of the study conducted in order to investigate the effects of immediate repetition (integrative planning) on the oral performance of fourteen learners of English as a foreign language in a real classroom context. For such, eight different measures of proficiency were investigated as dependent variables: to assess fluency — (1) speech rate unpruned, (2) speech rate pruned, (3) number of self-repairs per c-unit; accuracy — (4) number of errors per c-unit, (5) percentage of error-free clause; and complexity (6) number of clauses per c-unit, (7) number of words per c-unit, (8) mean length of clause. Moreover, a post-task questionnaire was applied to investigate students' impressions of the task and of their own performance during task encounter.

The results of descriptive statistics (supported by individual cases) will be presented and discussed first, followed of the results from the within-subject ANOVA. The results will be examined in light of the theoretical principles and empirical research findings discussed in chapter 2. The results of the repeated measures ANOVA (discussed in section 4.3) were not statistically significant for 7 of the eight measures. The only case where significant effect was found was fluency measured by speech rate pruned (that understands fluency as speed of content conveyance). Therefore, and following Lynch and Maclean (2000, 2001) and Bygate (2001) the transcripts will be analyzed in a case-bycase fashion, in an attempt to provide a more qualitative look into the nature of the changes that occurred in participants' speeches across the three presentations. Finally, the students impressions collected via questionnaire will be summarized and frequent topics, analyzed, and contrasted as to provide an overview of the task and participants' performances as perceived by the participants themselves.

# 4.2 Descriptive analysis

This section will present the descriptive analysis of the mean performance of the fourteen participants in the following eight measures of L2 speech production (dependent variables): (1) speech rate unpruned, (2) speech rate pruned, (3) total number of self-repairs per cunit (measures of fluency); (4) number of errors per c-unit, (5)

percentage of error-free clauses (measures of accuracy), (6) number of clauses per c-unit, (7) number of words per c-unit, and (8) mean length of clause (measures of complexity) across the three presentations (see Appendix N for the raw scores for each variable by dimension). The descriptive statistics can be seen in Tables 1 through 8. They provide the mean performance of the group, the minimum and maximum scores and the standard deviation in each of the three presentations. In order to analyze the linguistic outcomes of participants' performances across the three presentations, I will now scrutinize the general results of the three dimensions of performance considered in this study.

## **4.2.1 Fluency**

The descriptive statistics for the first measure (speech rate unpruned) can be seen in Table 1. Results show a slight increase in the mean number of unpruned words (concerned with fluency as lexically-filled time (Mota, 2003)) uttered per minute from round 2 ( $\mu$  = 120.5) to round 3 ( $\mu$  = 121.4) and a more significant increase from round 1 ( $\mu$  = 117.6) to round 3. Given that the higher the mean, the more unpruned words produced, that would indicate that the participants produced in average 4 more unpruned words per minute in the third moment than the first. Those results points to a rather unnoticeable increase in fluency, but the tighter standard deviation at round 3 ( $\sigma$  = 14.67) stresses that overall more fluent speech was produced at round 3.

Table 1
Fluency - Speech Rate Unpruned - SRU
Descriptive Statistics

| Descriptive simistics |    |         |         |          |                   |  |  |
|-----------------------|----|---------|---------|----------|-------------------|--|--|
| Presentations         | N  | Minimum | Maximum | Mean     | Std.<br>Deviation |  |  |
| Presentation 1        | 14 | 82.41   | 148.00  | 117.6957 | 18.22415          |  |  |
| Presentation 2        | 14 | 94.16   | 141.81  | 120.5386 | 16.29647          |  |  |
| Presentation 3        | 14 | 92.54   | 146.03  | 121.4007 | 14.67126          |  |  |

In speech rate pruned (concerned with fluency as content-filled time) the results of descriptive statistics showed a more perceptible result if compared to the unpruned count, with an average of around seven more words produced per minute ( $\mu = 104.7$  in round 1 to  $\mu = 111.8$  in round 3) with more significant increase lying again in the

comparison of the second round ( $\mu = 109$ ) with the first at 4.3 more words. Again, standard deviation was smaller at round 3 ( $\sigma = 15.00$ ) suggesting a more trustworthy reading of the final mean.

Contrasted with the pruned count (where round 3 minus round 1 = 4 words), that indicates that not only was performance in round 3 slightly more fluent in terms of word production but it increased more significantly in content conveyance per time. That difference, besides justifying the use of different measures for the same dimensions, indicates a possible effect of immediate repetition in content-based speed fluency. That being the case, a mean decrease on the amount of self-repair should be expected once participants' speeches are growing more focused and efficient. The results for speech rate pruned are in Table 2.

Table 2
Fluency - Speech Rate Pruned - SRP
Descriptive Statistics

| Presentations  | N  | Minimum | Maximum | Mean     | Std.      |
|----------------|----|---------|---------|----------|-----------|
|                |    |         |         |          | Deviation |
| Presentation 1 | 14 | 75.40   | 129.71  | 104.7664 | 16.10120  |
| Presentation 2 | 14 | 88.96   | 131.37  | 109.0464 | 15.07555  |
| Presentation 3 | 14 | 86.44   | 135.28  | 111.8579 | 15.00076  |

The number of self-repairs per c-unit (Table 3) shows a mean decrease across three presentations indicating a plausible reading that reformulation in the third round ( $\mu=.82$ ) occurred less than in the two previous rounds, that is, breakdown fluency improved, though only by a decrease of .14 reformulations per c-unit, once the lower the mean, the more unimpeded the speech. That result, nonetheless, corroborates the increase found in speech rate pruned, and points to an overall increase in fluency under the experimental conditions.

It can also be argued that the stabilization of breakdown fluency numbers may mean that the students are trying hard to monitor (and improve) their own speech. Given the objective of pedagogical intervention through the use of integrative planning being an improvement in performance built on performance itself, a lower number of breakdown fluency could be understood as having positive implications to development of performance.

Overall fluency, as operationalized in this study, showed positive

changes across the three rounds of presentations. Which points towards the findings by Lynch and Maclean (2000, 2001) and Bygate (2001) that immediate repetition may affect fluency positively, as it clears space from the formulation level of production.

Table 3
Fluency – Self-repairs Per C-Unit
Descriptive Statistics

| Presentations  | N  | Minimum | Maximu | ım   | Mean   | Std.      |
|----------------|----|---------|--------|------|--------|-----------|
|                |    |         |        |      |        | Deviation |
| Presentation 1 | 14 | .30     | 2.     | .61  | .9764  | .66814    |
| Presentation 2 |    | 14      | .25    | 3.00 | 1.0050 | .78262    |
| Presentation 3 |    | 14      | .08    | 2.50 | .8279  | .69788    |

## 4.2.2 Accuracy

The descriptive results for the accuracy measure of number of errors per c-unit, interestingly, showed a pattern that diverges from those in the speed fluency measures but resonates with what was found in repair fluency testing: accurate performance in the second presentation in average ( $\mu=1.03$ ) fell slightly compared to the first ( $\mu=.84$ ) before reaching an even higher mark in the final round ( $\mu=.69$ ) (given that, the lower the mean, the more accurate the speech). However shallow the results may be, and irrespective of the increase in the amount of errors produced in round 2, overall across the three presentations participants had an average decrease in the amount of errors produced per c-unit, which means an improvement in accuracy in terms of erroneous speech. This positive interpretation is also corroborated by the tighter standard deviation at rounds 1 and 3 ( $\sigma=.51$ ,  $\sigma=.49$ ) if compared to the more spread data at round 2 ( $\sigma=.77$ ). Results in Table4

Table 4
Accuracy – Number of Errors per C-Unit
Descriptive Statistics

| Presentations  | N  | Minimum | Maximum | Mean   | Std.      |
|----------------|----|---------|---------|--------|-----------|
|                |    |         |         |        | Deviation |
| Presentation 1 | 14 | .20     | 1.85    | .8400  | .51233    |
| Presentation 2 | 14 | .22     | 3.00    | 1.0307 | .77225    |
| Presentation 3 | 14 | .00     | 1.83    | .6957  | .49276    |

The results of descriptive statistics for the percentage of error-free clauses measure (Table 5) as in speed fluency were linear and positive for immediate repetition, that is, production of accurate speech is assumed to have increased around 4% ( $\mu=68.60$  in R1 and  $\mu=72.62$  in R3), being that for this measure, the higher the mean, the more accurate speech was produced. However, unlike in the speed fluency measures, the difference between round 2 and round 3 (3.5 %) was higher than that between round 2 and round 1 (.5%). Which means that more improvement in accuracy as error-free performance took place from the second to the third than from the first to the second rounds.

Table 5
Accuracy – Percentage of Error-free Clauses
Descriptive Statistics

| Presentations  | N  | Minimum Maximum |        | Mean    | Std.      |
|----------------|----|-----------------|--------|---------|-----------|
|                |    |                 |        |         | Deviation |
| Presentation 1 | 14 | 33.33           | 94.11  | 68.6021 | 18.21355  |
| Presentation 2 | 14 | 50.00           | 89.47  | 69.0536 | 13.71345  |
| Presentation 3 | 14 | 42.85           | 100.00 | 72.6286 | 17.62217  |

# 4.2.3 Complexity

For the subordination index (number of clauses (finite and nonfinite) per c-unit) there was again (as in the two speech rates and in percentage of error-free clauses) a linear progression across rounds 1 ( $\mu$  = 2.09), 2 ( $\mu$  = 2.53) and 3 ( $\mu$  = 2.59) indicating a slight increase in participants' level of subordination (a higher mean indicates more complex speech was produced). Although the increase was higher from

round 1 to round 2 (.44) than from round 2 to round 3 (.06) indicating more improvement in the first pair of rounds, overall the difference was remarkably small (.50). Being so, I do not believe these numbers would allow for a claim (even if illustrative) that the level of subordination of participants increased with immediate repetition. Table6 shows the descriptive results for the first measure of complexity.

Table 6
Complexity – Number of Clauses per C-Unit
Descriptive Statistics

| Presentations  | N  | Minimum | Maximum | Mean   | Std.      |
|----------------|----|---------|---------|--------|-----------|
|                |    |         |         |        | Deviation |
| Presentation 1 | 14 | 1.38    | 2.81    | 2.0907 | .48871    |
| Presentation 2 | 14 | 1.40    | 6.00    | 2.5300 | 1.18663   |
| Presentation 3 | 14 | 1.47    | 6.50    | 2.5929 | 1.27908   |

Meant to assess syntactic complexity at a global level, the number of words per c-unit measure is expected to provide a deeper insight (Bygate 2001b) at complexity than that of the rate of subordination. Descriptive statistics for this second measure (as seen in Table 7) yielded the first (slightly) negative results of the study from round 2 ( $\mu=17.94$ ) to round 3 ( $\mu=17.62$ ) being that the higher the mean the more complex the speech. But overall from the first to the third presentation the difference was positive with an average gain of 2.62 words per c-unit. Which means at a global level, participants speeches might have become marginally more complex.

Table 7
Complexity – Number of Words per C-Unit
Descriptive Statistics

| Presentations  | N  | Minimum Maximum |       | Mean    | Std.      |
|----------------|----|-----------------|-------|---------|-----------|
|                |    |                 |       |         | Deviation |
| Presentation 1 | 14 | 9.19            | 21.10 | 15.0064 | 3.51623   |
| Presentation 2 | 14 | 8.60            | 46.00 | 17.9414 | 9.10819   |
| Presentation 3 | 14 | 8.52            | 40.50 | 17.6243 | 7.78764   |

Finally, the third measure of complexity, mean length of clause, that calculates the average number of words per clause was the only measure of the study to yield slightly negative (and linear) results (Table 8). Clauses became shorter at -.14 words per clause from round 1 ( $\mu$  =

7.21) to 2 ( $\mu$  = 7.07), and -.18 words from round 2 to round 3 ( $\mu$  = 6.88) (the lower the mean, the fewer words the participant produced per c-unit). A result that, if compared to those found in the fluency measure, does not allow for further assumptions of an effect posed by this type of planning on participants' complexity. It is relevant to point out however, that the use of fewer words per clause, although signaling a less complex speech, might indicate a more straight to the point communication of ideas, which would imply delivering the message in a clear and straightforward fashion, if we consider the genre of the speaking task (poster presentation).

Table 8
Complexity – Mean Length of Clause
Descriptive Statistics

| Presentations  | N  | Minimum | Maximum | Mean   | Std.      |
|----------------|----|---------|---------|--------|-----------|
|                |    |         |         |        | Deviation |
| Presentation 1 | 14 | 5.59    | 9.66    | 7.2129 | .98315    |
| Presentation 2 | 14 | 5.78    | 8.46    | 7.0721 | .81476    |
| Presentation 3 | 14 | 5.80    | 8.43    | 6.8843 | .80224    |

Overall results of descriptive statistics may indicate that overall performance from round one to round three increased (though not linearly) in fluency, accuracy and complexity, being especially nonlinear for the complexity dimension where the mean remained almost the same from round 1 to round 3 and in some cases, decreased. The difference between most measures a cross presentations rounds was not found statistically different in the repeated ANOVA tests that were conducted (with the exception of fluency), however if they are to be considered as pointing to an (cautious) conclusion, that would be that fluency, accuracy, and complexity were favored by immediate repetition, being fluency the dimension to benefit the most, and complexity, the least. In addition, no evidence that could allow for an assumption of trade-off effect at the expense of complexity or accuracy (the two seemingly least affected dimensions) was produced by the descriptive analysis.

## 4.3 General Linear Model (GLM4) - Repeated Measures ANOVA

The main results (by measure) of the repeated measures ANOVA are shown as follows: Tables 9 through 17 show summarized versions of

the SPSS output that are relevant to the results of each measure (for tests that violated the assumption of sphericity, the alternative MANOVA (multivariates test) are presented instead of the test of within-subjects effect.

Overall, results were not statistically significant for most measures (except Speech Rate Pruned), however, I will briefly weave my analysis based on distinctions between results (even for those that were not significant) and, in the next section, individual cases that somehow reflect possible effects of the immediate repetition treatment as done by Lynch and Maclean (2000, 2001) will be discussed.

Moreover as mentioned in section 3.9 each round of performances represents a different testing condition. In other words that means that within the Repeated-measures ANOVA rationale each round is not simply a point in time where the scores for a certain condition are tested, but rather the testing conditions themselves, that can be understood as: Condition 1 (Round 1) = Presentation 1; Condition 2 (Round 2) = Presentation 1 + Presentation 2; Condition 3 (Round 3) = Presentation 1 + 2 + 3. Therefore, the experimental condition for Round 2 is having performed Round 1, and the experimental condition at Round 3 is having performed both Rounds 1 and 2.

#### **4.3.1 Fluency**

## 1. Speech Rate Unpruned

A first one-way within subjects ANOVA was conducted to compare the effect of immediate repetition on the number of unpruned words per minute in presentation 1, presentation 2 and presentation 3 conditions. The results (summarized in Table 9) show that speech rate unpruned was not significantly affected by the immediate repetition of the task, F(2, 26) = .758, p > .05. Mauchly's test indicated that the assumption of sphericity had not been violated,  $\chi 2$  (2) = .11, p > .05.

Table 9
#1 Fluency – Speech Rate Unpruned
Test of within-subject effects – SPSS 24 Output

| Source                                  |                       | Type III<br>Sum of<br>Squares | df | Mean<br>Square | F    | Sig. |
|---|-----------------------|-------------------------------|----|----------------|------|------|
| #1 Speech<br>Rate<br>Unpruned           | Sphericity<br>Assumed | 105.243                       | 2  | 52.622         | .758 | .479 |
| Error(#1<br>Speech<br>Rate<br>Unpruned) | Sphericity<br>Assumed | 1805.924                      | 26 | 69.459         |      |      |

#### 2. Speech Rate Pruned

A second one-way within subjects ANOVA was conducted to compare the effect of immediate repetition on the number of pruned words per minute in presentation 1, presentation 2 and presentation 3 conditions. The results (Table 10), unlike in the first measure, show that speech rate pruned was significantly affected by immediate repetition, F(2,26) = 3.60, p < .05. In addition, Mauchly's test indicated that the assumption of sphericity had not been violated,  $\chi 2$  (2) = 1.63, p > .05.

Since the null hypothesis (there's no increase with repetition) could be rejected it is valid to notice that there is statistically significant difference from round 1 to round 3 (.024), though not to round 2 (.360) or from round 2 to round 3 (1.00) found in the Bonferroni post hoc test. Still, that indicates that in this study immediate repetition showed to have allowed for significant improvement in fluency assessed by this measure. The summarized SPSS output for the post hoc test can be visualized in table 11.

Table 10
#2 Fluency – Speech Rate Pruned
Test of within-subject effects – SPSS 24 Output

| Source               | 3 33                  | Type III<br>Sum of<br>Squares | df | Mean<br>Square | F     | Sig. |
|----------------------|-----------------------|-------------------------------|----|----------------|-------|------|
| #2<br>Speech<br>Rate | Sphericity<br>Assumed | 357.051                       | 2  | 178.525        | 3.606 | .041 |

| Pruned) |
|---------|
|---------|

Table 11
Bonferroni post-hoc test
Pairwise Comparison – SPSS 24 Output

| Pairwise Comparisons |                    |                     |               |                   |                   |  |  |  |  |  |
|----------------------|--------------------|---------------------|---------------|-------------------|-------------------|--|--|--|--|--|
| (I) TWO<br>FLUENCY   | (J) TWO<br>FLUENCY | Mean<br>Difference  | Std.<br>Error | Sig. <sup>b</sup> | 95%<br>Confidence |  |  |  |  |  |
| PRUNED               | PRUNED             | (I-J)               | Liioi         |                   | Interval          |  |  |  |  |  |
| 1                    | 2                  | -4.280              | 2.572         | .360              | -11.341           |  |  |  |  |  |
|                      | 3                  | -7.091 <sup>*</sup> | 2.271         | .024              | -13.327           |  |  |  |  |  |
| 2                    | 1                  | 4.280               | 2.572         | .360              | -2.781            |  |  |  |  |  |
|                      | 3                  | -2.811              | 3.074         | 1.000             | -11.253           |  |  |  |  |  |

#### 3. Number of Self-Repairs

For the effects of immediate repetition on the number of self-repairs (reformulations, false starts, non-rhetorical repetitions) per cunit, the results of the one-way within subjects ANOVA (Table 12) show that the dependent variable was not significantly affected: F (1.35, 17.63) = 1.16, p > .05. Since Mauchly's test indicated that the assumption of sphericity had been violated,  $\chi 2$  (2) = 7.70, p < .05, degrees of freedom were corrected using Greenhouse-Geisser estimates of sphericity ( $\epsilon$  = .67). The results show that there was no significant effect of immediate repetition on the amount of self-repairs per c-unit, V = .35, F (2.00, 12.00) = 3.30, p > .05.

Table 12 #3 Fluency – Self-repairs per C-unit Multivariates test<sup>a</sup> – SPSS 24 Output

| Effect                     | mes test —        | Value | F                  | Hypothesis<br>df | Error<br>df | Sig. |
|----------------------------|-------------------|-------|--------------------|------------------|-------------|------|
| Self-<br>repairs<br>per C- | Pillai's<br>Trace | .355  | 3.301 <sup>b</sup> | 2.000            | 12.000      | .072 |

#### 4.3.2 Accuracy

#### 4. Number of Errors per C-unit

The results of the one-way within subjects ANOVA(table 13) show that the number of errors per c-unit was not significantly affected by immediate repetition, F (1.34, 17.46) = 2.53, p > .05.Mauchly's test indicated that the assumption of sphericity had been violated,  $\chi 2$  (2) = 8.05, p < .05, therefore degrees of freedom were corrected using Greenhouse-Geisser estimates of sphericity ( $\epsilon$  = .67). The results of the MANOVA show that there was no significant effect of immediate repetition on the number of errors made by c-unit, V = .28, F (2.00, 12.00) = 2.40, p > .05.

Table 13
#4Accuracy – Number of Errors per C-unit
Multivariates test<sup>a</sup> – SPSS 24 Output

| Munivari                    | aies iesi         | 51 55 24 O | ліриі              |                  |             |      |
|-----------------------------|-------------------|------------|--------------------|------------------|-------------|------|
| Effect                      |                   | Value      | F                  | Hypothesis<br>df | Error<br>df | Sig. |
| Errors<br>per<br>C-<br>unit | Pillai's<br>Trace | .286       | 2.404 <sup>b</sup> | 2.000            | 12.000      | .132 |

#### 5. Percentage of Error-free Clauses

Likewise, the results of the one-way within subjects ANOVA for percentage of error-free clauses (table 14) show that percentage of error-free clauses was not significantly affected by immediate repetition, F(2, 26) = .81, p > .05.In addition, Mauchly's test indicated that the assumption of sphericity had not been violated,  $\chi 2$  (2) = 1.45, p > .05.

The statistical results were not significant to allow me to extract any assumptions of effects of immediate repetition on accuracy. However, I strongly believe that, given the small sample of participants a more qualitative, in depth look at evolution in accuracy is necessary. Thus it will be offered in the next section.

Table 14
#5Accuracy – Percentage of Error-free Clauses
Test of within-subject effects – SPSS 24 Output

| Source                         |                       | Type III<br>Sum of<br>Squares | df | Mean<br>Square | F    | Sig. |
|--------------------------------|-----------------------|-------------------------------|----|----------------|------|------|
| #5%<br>Error-<br>Free          | Sphericity<br>Assumed | 136.251                       | 2  | 68.125         | .812 | .455 |
| Error (#5<br>% Error-<br>Free) | Sphericity<br>Assumed | 2181.052                      | 26 | 83.887         |      |      |

#### 4.3.3 Complexity

#### 6. Number of Clauses per C-unit

Similarly, complexity measured as a rate of subordination (clauses per c-unit) was not significantly affected by immediate repetition, F (1.28, 16.68) = 1.96, p > .05.Moreover,Mauchly's test indicated that the assumption of sphericity had been violated,  $\chi 2$  (2) = 9.80, p < .05, therefore degrees of freedom were corrected using Greenhouse-Geisser estimates of sphericity ( $\epsilon$  = .64). The results of the multivariates test (MANOVA) (Table 15) show that there was no significant effect of immediate repetition on the number of clauses produced per c-unit, V = .148, F (2.00, 12.00) = 1.04, p > .05.

Table 15
#6Complexity – Number of Clauses per C-unit
Multivariates test<sup>a</sup> – SPSS 24 Output

| Effect                    |                   | Value | F                  | Hypothesis<br>df | Error<br>df | Sig. |
|---------------------------|-------------------|-------|--------------------|------------------|-------------|------|
| Clauses<br>per C-<br>unit | Pillai's<br>Trace | .148  | 1.043 <sup>b</sup> | 2.000            | 12.000      | .382 |

## 7. Number of Words per C-unit

The one-way within subjects ANOVA results show that the number of words per c-unitwas not significantly affected by immediate repetition either, F(1.25, 16.29) = 1.52, p > .05. Once it was found that

Mauchly's test was significant indicating that the assumption of sphericity had been violated,  $\chi 2$  (2) = 10.86, p < .05, the degrees of freedom were corrected using Greenhouse-Geisser estimates of sphericity ( $\epsilon$  = .62). Finally, the results of the multivariates test (Table 16) show that there was no significant effect of immediately repeating presentations on the number of pruned words per c-units, V = .119, F (2.00, 12.00) = .81, p > .05.

Table 16
#7Complexity – Number of Words per C-unit
Multivariates test<sup>a</sup> – SPSS 24 Output

| Effect                  |                   | Value | F                 | Hypothesis<br>df | Error<br>df | Sig. |
|-------------------------|-------------------|-------|-------------------|------------------|-------------|------|
| Words<br>per C-<br>unit | Pillai's<br>Trace | .119  | .810 <sup>b</sup> | 2.000            | 12.000      | .46  |

#### 8. Mean Length of Clause

Finally, a third one-way within subjects ANOVA was conducted for complexity with the objective to compare the effect of immediate repetition on the mean length of clauses produced in rounds 1, 2 and 3. The results, as in the previous measures of complexity, show that the number of words per clause was not significantly affected by immediate repetition, F (1.36, 17.71) = .92, p > .05. Again, the Mauchly's test for sphericity indicated that said assumption had been violated,  $\chi 2$  (2) = 7.56, p < .05, therefore degrees of freedom were corrected using Greenhouse-Geisser estimates of sphericity ( $\varepsilon$  = .68). Proceeding to multivariates test (MANOVA) (summarized in table 17) the results showed that there was no significant effect of immediate repetition on the mean length of clauses produced by the participants, V = .143, F (2.00, 12.00) = .99, p > .05.

The ANOVA results for the three complexity measures were not statistically significant to allow refuting the null hypothesis and from then argue a possible implication of immediate repetition on the production of complex speech.

Table 17 #8Complexity – Mean Length of Clause Multivariates test<sup>a</sup> – SPSS 24 Output

| 111 title v Cer t Cet          | es test s         | 1 55 2 1 0 1 | upui              |                  |             |      |
|--------------------------------|-------------------|--------------|-------------------|------------------|-------------|------|
| Effect                         |                   | Value        | F                 | Hypothesis<br>df | Error<br>df | Sig. |
| Mean<br>Length<br>of<br>Clause | Pillai's<br>Trace | .143         | .998 <sup>b</sup> | 2.000            | 12.000      | .39  |

#### 4.4 Qualitative analysis - general discussion

In light of the case-by-case analysis performed by Lynch and Maclean (2000, 2001), and in order to enhance the analysis of the quantitative results of this investigation, I will now scrutinize the changes in performance of the participants across presentations first, focusing on factors that might have influenced the overall results, then, looking at the most noteworthy cases of individual performance improvement, especially in terms of accuracy, that might corroborate the hypotheses guiding this study.

The lack of significant effects and linearity found in seven of the eight measures may, to some extent, be due to a number of factors involving the task employed and the participants themselves, as Palotti (2009, p. 599) stresses "one should be aware that fluctuations in CAF do not depend exclusively on psycholinguistic factors such as memory, automaticity of cognitive efficiency, but they may be responsive to the task's semantic and pragmatic demands".

One thing that became apparent as early as data collection was that some participants had been showing signs of fatigue during the second and third rounds of the performance task. They were visibly growing tired or impatient and consequently they talked less from round to round. For example, participants P#3 and P#4 decreased from 1.31 minutes to .59 and from 1.24 to .57 respectively, in round 1 and round 3, and yet more noticeably participants P#7 and P#9 almost halved their presentations (from 2 minutes to 1.06, and from 2.18 to 1.19 respectively in round 1 and round 3). Interestingly, participant P#3 claimed (in the questionnaire) that the third round was the hardest due to the presence of higher-level speakers (classmates) in the rotating

audience, which made her more nervous. P#4, in turn, said to have lost control of the pre-planned outline of her presentation in round one, and to have recovered such control in rounds 2 and 3, which could justify the decrease in speech time. P#7 claimed to have the full content of his presentation organized by the third round (as opposed to the first) allowing him to concentrate on improving his search for more sophisticated vocabulary. That search for better lexical items may have come (unnoticeably) at the expense of the amount of content conveyed, which would justify the aforementioned steep decrease in speech time. P#9, in turn, attributed the increased difficulty she found in round 3 to her own lack of preparation and lack of commitment to the cycle of tasks as a whole (students responses to the questionnaire can be found in Appendix H).

Moreover, increased familiarity with the topic provided by the cycle of tasks, and the creation of the poster itself seem to have enabled extra planning mechanisms to take place and more conceptual and formulaic resources to be stored. In addition, the scores yielded by some participants were consistently uniform across presentations, which might indicate interference from the added extra pre-task familiarization mechanisms provided by the cycle of tasks that preceded the presentations. For example, participant P#6 had oddly similar counts in number of self-repairs: 3, 3 and 1 (rounds 1, 2 and 3 respectively); number of errors: 2, 2, and 4; and in number of c-nits (8 in all three rounds) (participants' individual scores and counts can be seen in Appendix O). Looking at P#6's responses to the questionnaire the level of rehearsal that this participant underwent becomes flagrant once he meticulously reports on his lexical choice mistakes as early as the first round: "(...) I think I used some words I had not intended to. As when I said 'students' and then realized the term 'participants' would have been better. Besides, I mistook the word 'regarding' for 'recording' (...)" (see original in Appendix H). This way, the cycle that took place as part of the English V course plan (see section 3.4 and Appendix D) provided for rehearsal that was not controlled in this study, and which may have made the effects of repetition less apparent, therefore stressing the need for a more qualitative look into the results.

Another implication of the task performed was that some participants that displayed accuracy increase across the presentations seemed to have this improvement clustered in the first half of their speech in the round. It seems that focus is at the beginning of the speech in the second and third rounds, and halfway through completion

participants either lost control over the strain of production, or lost track of what they had planned to improve or focus on. Although no estimate of distribution of errors was conducted, participant P#5 for example, had 9 errors and 16 c-units in round three, however, 8 of the errors occurred in the last 7 c-units. That could also indicate depletion of attentional resources (having in mind Skehan's (1996) Limited Attention Capacity Hypothesis or trade-off hypothesis) (Skehan 2015, pg 124-128). It might indicate that the participant's attentional resources were being dedicated to fluency (in terms of time). Since significant improvement in fluency was found in the Speech Rate Pruned measure, it is plausible to assume that the positive impact imparted by immediate repetition to fluency might have come at the expense of accuracy and complexity. Furthermore, the amount of errors found in P#5's third round (as well as its clustering at the end of the speech) could also be partially attributed to this participants' own conscious attempt to improve upon his performance on the second round. In P#5's own words (from question 2.3 of the questionnaire. My translation): "For trying to be better than in the second, the third presentation, for me, was a little harder and worse than the second"

Similarly, it became apparent during data transcriptions and segmentation that some participants were found to make errors in the final round on constructions that had already been uttered accurately in one or both previous rounds, or even to regress to previous mistakes after trying to improve upon the structure. Some examples are, again, participant P#5 who tries (although unsuccessfully) to correct his mistake from round one: and is quotes about the beliefs, in round two: and here is some quotes of to go back in round three to: and is quotes ah that; and participant P#10 who, in turn, used "that" correctly in rounds 1 and 2, but made an error and switched it into "there" in round 3: beliefs are certain views that a group or a person hold round 1, beliefs are c. ahn certain views ahn or or conceptions that a certain group or people, in round 2 and beliefs are views or conceptions there a group or a person hold, in round 3.

Consequently, I believe participants might have felt more comfortable to venture into novel structures on constructions they felt comfortable using before. In a sense, that movement could be compared to the hypothesis testing function of output argued by Ortega (1995, p. 126-139). For example, participant P#6 was considered to have committed an error in the third round when attempting to improve on the structuring of his opening line by adding a relative pronoun (which)

that had not been used before, therefore adding to the number of mistakes accounted for in the third round in the number of errors per cunit count, though the intent to improve upon his own production, and the evolution of the chunk was apparent, and could, I believe, be attributed to immediate repetition. For example (P#6 round 1): and our group is composed of Name, Name, Name, and Name<sup>7</sup>; round 2: and our group is composed of four students me Name Surname Name and Name; round 3: and our group is composed of four participants which are me Name Surname Name and Name. This example could, in addition, indicate that the participant assumed a rather risk-taking attitude that improved his complexity at the expense of his accuracy.

Based on these occurrences I am inclined to believe that the opportunity to keep on repeating the presentation to different audiences led the participants to consciously attempt to improve or embellish their speech even if the outcome was not accurate. That is, in my opinion, a positive implication of performance improved upon performance (through repetition), and although it might reflect negatively on the counts, should not be considered so.

On this positive note, I now proceed to presenting my observations of changes in participants' speeches that resulted in clear improvements. Aside from the numeric results accuracy was found to have improved in specific constructions across participants. For the sake of illustration and to complement (or challenge) the quantitative results, I will list some noteworthy occurrences of improvement by participant.

Participant P#2 besides showing considerable progress in her number of errors per c-unit (from 1.07 in round 1 to .69 in round three ) also showed evidence of constant monitoring that allowed for improvement attempt at) across presentations. In the first round she uses the Portuguese construction "teste de nivelamento" (placement test), in the second round she changes it to a hybrid Portuguese/English expression "nivelamento test", and repeats the construction in round 3. Since the error segmentation for the accuracy count has considered both "teste de nivelamento" and "nivelamento test" as one error each, it has missed the ever so slight improvement that took place. The participant never achieved a final correct phrase, possibly for not finding an appropriate translation for the word "nivelamento", but her switching the position of the adjective,

<sup>&</sup>lt;sup>7</sup> The word "Name" in the examples replaces the actual names of the participants mentioned in some rounds, the same logics applies to the word "Surname"

even if in her native language, to accommodate the syntactical structure of English, indicates that the participant was consciously trying to improve upon her previous speech. Another interesting, and more conclusive progress made by participant P#2 was in attempting to achieve a correct pronunciation of the word "foreigners". The occurrence in round one: foreign, foreigns, appears again as a repetition of the inaccurate outcome in round two: foreigns foreigns, and is finally corrected into the intended word after two false-starts in round three: foreign. foreigners. Finally, P#2's responses to questionnaire leave no doubt that the participant was consciously tracking her mistakes and trying to improve. In her answer to the first question (regarding overall impressions of the task) she wrote: "we had the opportunity to improve our discourse in the sequence of presentations", and in her account of the second round she stated: "In the attempt to improve my speech, it seems that I became even more confused". Finally referring to round 3 she concludes: "I liked the last presentation the best because I felt less nervous and I think the fact of having repeated the presentations helped me feel more secure".

Participant P#5 also displayed some noteworthy examples of improvement in accuracy. In the following example, the participant gradually improved upon the structure until final correction: round 1:a good teacher has to be patient and has to know differen. differentiate ehn one student ehn from another, became a good teacher has to be patient and know to differentiate a.. an.. an student.. a student form from another with the addition of the infinitive particle "to" for the probable intended "how to" that could solve the matter. Finally in round 3 he says a good teacher has to be patient and ho. ehn know how to differentiate ahn a student from another. This might indicate that the participant was either trying from the beginning to fix the problem but could not, due to pressure and task demands, or he was not able to access a construction he knew of or he knew existed. Whichever is right, he finally managed to correct his construction the third time he delivered his speech. Participant P. #5 had another notable improvement with the initially awkward they answers is already the same in round one, into they answers is ehn are a. already the same in round 2, correcting the agreement of the verb by replacing it with a modal (easily agreed with an infinitive without "to") in round three: so the, their answers can be ehn very similar. As it was exemplified in the beginning of this section, P#5 too mentioned in the questionnaire to have been purportedly trying to polish his speech.

Participant P#11 had a remarkable improvement in accuracy both in terms of a decrease in erroneous speech (.25 errors per c-unit in round 1 and .10 in round 3) and increase in error-free speech (85.7% error-free clauses in round 1 and 95.9% in round 3), which do not always come hand-in-hand. One example of corrected mistake from participant P#11 was the construction of the plural "writing skills" uttered as singular writing skill in rounds one and two and finally "skills" in round three. In his questionnaire, the participant alleged not to have rehearsed or planned his speech for the first round, but he did feel improvement (especially regarding language choices) in the third round. In addition, participant P#8 also showed seemingly significant accuracy improvement as early as his second presentation. Besides, participant P#8 had a remarkable decrease in the number of errors produced across presentations (6 in round 1, 6 in round 2 and 1 in round 3). An example would be the correct use of the word "regarding" that was first used as in: regarding to data analysis and discussion in round one, and became regarding data analysis and discussion as early as round two and was kept correct in round three. In addition participant P#8 also claimed to have felt more confident in round 3 and to have tried to reproduce what had been said in round 2 (being more successful at it than participant P#5, above). These occurrences, reinforce the assumption that grammatical improvement does take place in immediate repetition of an oral task and that learners do seem to integrate knowledge acquired in the earlier rounds of the task to performance in the posterior rounds.

Participant P#12 could also have some thought-provoking improvements pinpointed. This example is especially interesting because the participant manages to correct an error in round 2 and then polish the expression in round 3. That is, morphological and syntactical problems were corrected as early as the second round. In the third round the structure of the phrase is improved to better convey the intended meaning: round 1: we believe furthing readings ahn readings would be nice to know about more about the topic, round 2: we think that maybe further readings on the topic could also help us, finally round 3: and also further readings about the topic wou. would el. help us to.. improve our research. Even though the outcome in round three is not grammatically ideal ("would have"), and counted as more mistakes for the accuracy measures than round 2. It would be unfruitful to deny that the participant kept on trying to improve her production both in terms of sophistication and grammaticality. Occurrences like this may reflect positively on the use of immediate repetition as a planning process

allowing speakers to benefit from increased available mental space to orchestrate changes in their formulation and articulation (Bygate, 2001; D'Ely, 2006 Skehan, 2014, Skehan 2015).

As for the changes concerning the other two dimensions (fluency, and complexity) it is relevant to look at repair fluency once repair mechanisms are not accounted for by the most of the other measures employed in this study, although they might have a notorious impact in the perception of proficient speech and could, I believe, be understood as an indicator of *monitoring* (Krashen, 1987).

The overall difference in the amount self-repairs produced by Participant P#7, for example, in rounds 1, 2, and 3 can be observed in the fact that 62 of his total unpruned words were removed from pruned count in round 1 and 24 in round 3. Consequently, the participant made use of 1.64 repair mechanisms less than the average (of .97) for all participants in round 1 for instance.

That, however, does not have to be taken as an entirely negative process, since it indicates frequent occurrence of monitoring. I see monitoring as a positive process in that it stands for constant dedication of attentional resources to language production. Its negative effects on performance are noticeable (as mentioned by D'Ely 2006 "monitoring might be counter productive concerning fluency" (pg. 207)), but so might be its positive implications to language acquisition as stated by (Lynch and Maclean 2000, p.222-223): "learners make progress through experiencing the need to modify their own production of the L2" (D'Ely 2006, Pica et all 1996).

As for complexity measured by means of subordination (clauses per c-units), although progressive improvement was found in individual cases, the highest scoring participant yielded results that might not reflect on complex syntax. Participant P#11 produced 1.75 clauses per c-unit in round 1 and 2.45 in round three. Participant P#14 went from 2.2 clauses per c-unit in round 1 to 3.66 in round 3. Participant P#8, in turn, had an increase in his subordination count from 2 clauses per c-unit in round 1 to 6 in round 2 and 6.5 in round 3. Even though the increase seems impressive, his speech was truncated and lost syntactic coherence due to an overuse of subordination. It is valid to point out, nonetheless, that in a poster presentation scenario, content is expected to be conveyed in a clear and straightforward manner. The pressure that composes the nature of the task, alongside with the need to get the message across to the audience, may in itself be a deterrent to noticeable improvements in complexity. Especially being that (as it was found in this study) fluency

(in terms of pruned speech production) was the dimension of proficiency to most have profited from immediate repetition in the poster carrousel task.

## 4.5 Post-task questionnaires - participants' perception

The purpose of the post-task questionnaire was to shed light upon the results found in the speech data, so that more insightful conclusions could be drawn about how the task affected participants' performances. The first of the two main questions of the questionnaire (as shown in section 3.6.2) asked students to give an overall account of their impressions of the task. Two salient (and somehow opposing) trends surfaced from students' answers to the first question: enjoyment of the task and difficulty performing it. The first and most frequent trend enjoyment of the task – was positive and revealed a different number of reasons that led students to appreciate the presentations. Eight different students mentioned having liked the poster presentations. This seems to be evidence that the task was indeed successfully received by the students, who, in spite of difficulties faced, did not fail to perceive and bring up the benefits they felt perfoming the task. Three participants (P#1, P#3, and P#11) praised the task for being innovative ("it was interesting repeating the presentation three times, a completely new experience", P#11), and two participants (P#1 and P#3) were satisfied with the resemblance with real (academic) life tasks ("it was one of the few activities well related to the real world", P#3). In addition, five participants mentioned one or another positive pedagogical benefit including opportunity for gradual improvement (P#2) and practice (P#6) and facilitating learning (P#10) and self-reflection (P#11 and P#12); P#12's words summarize this observation: "I believe it was a good experience having the opportunity to present three times and notice the development of our presentation and performance". However, a similarly relevant number of participants (six) mentioned some type of difficulty. Of these, nonetheless, four were related to issues that do not exclusively derive from the poster carrousel task, such as trouble with presentations (P#1 "It's a hard task for me to conduct formal presentations in English") with group assignment and the preceding cycle of tasks (P#9 "personally, group assignments are a big challenge because they rely on everyone engaging it"), and with the English language itself (P#4 "the subject wasn't hard, but speaking English in the presentation made it harder"). Only two participants expressed

complaints related to the carousel (P#5 and P#13), P#5 wrote: "(...) The whole assignment (referring to the cycle) took too long to conclude and the presentation was a little difficult, but in the end it was worth it (...)." Still, three other participants (P#11, P#13, P#14) mentioned to have performed well or to have noticed gradual improvement, P#13 said "structurally, I believe my speech improved throughout the presentations"). Overall, based on answers to the first question in the post-task questionnaires, I believe it can be assumed that the poster carousel was a fruitful and stimulating experience to most students, though plausibly uncomfortable (but still challenging) to a few others.

The second question in the questionnaire (comment, with details, on how you felt regarding content conveyance and language choices) was longer, more detailed, and had to be answered three times (one for each round of presentation). The question also offered a more insightful view on within-participant perception of development across presentations. In order to better unveil the most frequent and salient impressions and perceptions registered in the second question, I will highlight the main trends which surfaced in the answers for each round of the task.

#### Round 1

Among the many topics mentioned by the students in the first section of the question there were seven participants who reported having faced some type of form-related difficulty (being the realization of having made syntactical and lexical errors or problems with pronunciation), they were P#2, P#3, P#5, P#6, P#10, P#11, and P#12. P#12 asserted: "I phrased poorly some of my sentences and tried to rephrase them immediately". Three other participants (P#5, P#7, and P#13) claimed to have faced some difficulty with content such as organizing the topics to be communicated, but one (P#13) attributed it to lack of preparation: "I wasn't that prepared, so I had to think a lot about the subject and not so much about how to speak it".

Interestingly, the most consistent issue brought up by the students in the description of this round was one that was not necessarily elicited by the question: the matter of anxiety. So many as nine students mentioned anxiety-related issues in the first round of presentations (P#1, P#3, P#4, P#5, P#6, P#7, P#8, P#12, and P#14). P#1 said: "the first time around I was really nervous (...) I stuttered, made pauses (...)" P# 12 echoed: "In the first presentation anxiety got in the way, so I would forget what I wanted to say and how I wanted to say it (...)".

Round 2

Some positive implications of the task performed by the students could already be noticed in their reports on the second round of presentations. An expressive number of eight participants (P#1, P#2, P#4, P#5, P#6, P#7, P#12, and P#14) alleged to have felt less (or not at all) anxious in the second round than they did in the first. P#7 wrote: "feeling calmer, it was easier to organize my ideas (...)", and P#1, in turn said: "I wasn't nervous, and this time I could think of I was saying".

Consequently, an increase in proficiency and attention dedicated to content conveyance was felt and reported by five participants (P#1, P#3, P#4, P#5, and P#7) in the second round. While four other participants (P#7, P#11, P#12, and P#13) reported to have noticed increase in focus and performance regarding form. In P#12's words: "I believe at this point I had a better idea of what words to use and in what moments to use them." It is interesting to notice, however, that three of these participants (P#11, P#12, and P#13) claimed to have suffered some level of decrease in the quantity or quality of the content conveyed, which I believe may serve as example of limited attentional resources being deployed and depleted. P#11 said "A little less content, but I believe to have made better language choices".

#### Round 3

Responses to the section related to round 3 were even more enthusiastic than the previous ones. Seven participants (P#1, P#2, P#4, P#6, P#7, P#8, and P#10) alleged to have felt more relaxed and confident yet to perform in the third round. P#1 wrote: "At last I was feeling calmer, I knew what I was saying and why I was saying it. I could relax and get my effort and my work in this research across". That supports the assumption that the opportunity to lapidate production on knowledge derived from integrating experience acquired at performance to performance itself may also pose a great positive effect on students anxiety control. In addition to that is the fact that four participants (P#1, P#11, P#12, and P#13) stated to have noticed improvement in content conveyance, and five participants (P#6, P#7, P#10, P#11, and P#12) felt this improvement in what concerns form (fewer mistakes, better lexical choices and more attention to details). P#12's answer is evidence of perception of these two kinds of improvement: "I believe I managed to improve my performance both in content and in language choices".

To put it in a nutshell, the effects of the poster presentation task as perceived and reported by the students who engaged in/on it could hardly have been more reassuring of the benefits of the task itself and its consecutive repetition. The feeling of improved performance, as

described in this section, was easy to identify as the salient topics in students responses were unveiled. That is, most participants in this study, while reflecting on their feelings and performances, believed to have undergone positive changes in their levels of anxiety, content organization and conveyance, and accuracy of production as their presentations unfolded (even if some improvements came at the expense of others). Overall, students' questionnaire responses have allowed this researcher to improve upon the findings of the hard data analysis (that of pruned fluency being the only dimension of proficiency to significantly benefit from the task) and to emphasize the benefits of immediate task repetition (Integrative planning) to anxiety control and to self-reflection regarding conceptual organization and accurate production.

#### 5. Final Remarks

The objective of the present study was to investigate the extent to which immediate repetition of a task affects students' (task performers) speech, in terms of *fluency*, *accuracy*, *and complexity*. The research questions proposed were: RQ1: Does immediate repetition impact participants' oral performance? RQ1a: If so, to what extent does it impact students' fluent oral performance?RQ1b: If so, to what extent does it impact students' accurate oral performance? RQ1c: If so, to what extent does it impact students' complex oral performance?

Finally, the hypothesis raised prior to the study were: H1: Immediate repetition of an oral task enactment will allow performers to integrate experience acquired through performance to performance itself resulting in an increase in fluency (measured as speech rate unpruned, pruned, and number of self-repairs) and/or accuracy (in terms of number of errors per c-unit, and error-free performance) and/or complexity (measured as clauses per c-unit, words per c-unit, and words per clause). H2: Evidence of a trade-off effect may be found as immediate repetition (as well as delayed repetition) may favor fluency and complexity at the expense of accuracy.

In light of these, and in spite of the many limitations that constrain this study (further developed in the next section), if I am to list a set of concluding remarks based on the findings of this study I would reiterate drawing on the results of descriptive statistics and the case-bycase discussion of linguistic change, that this study points to positive effects of immediate repetition of tasks in classroom environments. However, the results of the GLM repeated measures ANOVA indicate (cautiously) that effect was found in the experimental treatment to speech rate pruned alone. Thus, answering the research questions: RQ1: yes, immediate repetition can be said to have caused a small impact on participants' oral performance; RQ1a: immediate repetition has showed an impact on participants production of pruned words per minute, indicating an increase of novel content conveyance across presentations (resonating with Lynch and Maclean, 2001; Bygate 2001); RQ1b: immediate repetition has not significantly affected participants' accurate oral performance although positive changes in individual performances have been noticed (that corroborate with Lynch and Maclean, 2001): lastly, RQ1c: immediate repetition has not been found to significantly affect participants' complex performance. Similarly, hypothesis 1 was partially confirmed once an increase was found only for fluency

measured as pruned speech rate. Hypothesis 2 was also only partially confirmed since significance was found only in the speech rate pruned results, it could be said that trade-off took place favoring fluency over complexity and accuracy, however, the frailty of the statistical data and the case by case analysis of improvement suggest caution when drawing that conclusion.

Added of other observations, my summarized conclusions are:

- (1) As Lynch and Maclean (2000, 2001) have posited, there can be found improvements in production as well as mechanisms of speech control in the repetition of the same oral task in what concerns content-filled fluency as indicated by the significance of speech rate pruned, added of the near significance of the number of self-repair by c-unit count. The analysis of descriptive statistics also pointed to that direction.
- (2) On the other hand no statistical significance was found in the measures of accuracy and complexity (which, in addition, presented a decrease in mean length of clause). That may seem contradictory with the findings of Bygate (2001b) that at least complexity would be fostered by repetition, however, the nature of the task (considering its genre poster presentation and its final outcome presenting to an audience) demands a clear and straightforward speech that may not leave space for the elaboration of complex speech.
- (3) Although improvement found in performance might not be significant, immediate repetition of a task (as a planning mechanism allowing for changes in formulation and articulation) was found in a case-by-case review of the transcriptions to have mildly resulted in positive changes in the speech produced by the participants. Moreover, the students' impressions registered in the post-task questionnaire were clearly positive and indicated decrease in levels of anxiety and increase in self-perception of performance (regarding conceptual organization and accurate production) and monitoring. All processes which are positive not only to performance but to acquisition itself.
- (4) Immediate repetition maybe could have yield more fruitful results in the classroom if students' attention was directed to the need or possibility of performance improvement allowed by this mechanism.
- (4a) Overall, the use of repetition in task performance in classroom settings could be considered, especially if improving fluency is among the goals of the class.

Finally, these results can be taken as indicating that repetition, as a form of integrative planning, is in fact effective in increasing the degree of proceduralization in the L2 formulator (Towell, Hawkins &

Bazergui, 1996; Fortkamp, 2000; D'Ely 2006). That means to say that repetition enabled learners to rearrange knowledge and practice allowed their speech process to become more effective in what concerns retrieval of information, thus furthering fluent language performance.

#### 5.1 Limitations of the study and suggestions for further research

This piece of research was a preliminary attempt to methodically investigate the effects of immediate repetition of a task on L2 learners' fluent, accurate, and complex oral performance, as well as unfold participants' perception of the task and its enactment. In spite of being grounded on the available literature, it is prolific in limitations. As asserted before, the results yielded by the study and here discussed are to be treated with a great deal of caution.

As mentioned in the qualitative analysis, familiarity with the topic and jargon is sure to have influenced participants` performance in the tasks. The cycle of tasks and the creation of the poster itself have provided extra planning resources that were not controlled in this study, though the distribution of mistakes, and the incidence of self-repairs suggest that the planning at place during the task cycle had not bore much of an effect on the way participants spoke. However, because said interference has the potential to tamper with the results, shortening the scope of assumptions and degree of generalizability of this study, it was considered to be the most significant limitation of this investigation.

Another methodological shortcoming of this study lies in its lack of a measure of lexical variety and/or density (Bygate 2001, D'Ely 2006, Bei 2010), which prevented the study from assessing possible changes in lexical variety that might have happened as effect of immediate repetition, and further support the lack of significant effects on accuracy and complexity, once attentional resources might have been dedicated to lexical sophistication. On a similar note, breakdown fluency (measured as a pause ratio) could have been assessed to complement the findings about variations in fluency.

Finally, even though the level placement parameters of the undergraduate program from where the participants were selected were taken into account for the selection, a certain level of discrepancy in proficiency became apparent during the analysis of the data, thus, and in order to further validate a case-by-case look at participants linguistic change, a pre-task proficiency test could have been applied. That way, not only would this study become more comparable to its predecessors,

but it would also become more precise in the assessment of leveldependent changes, relevant for both SLA and Language Pedagogy studies.

## 5.2 Pedagogical implications

The interest in the possible pedagogical implications of this study is intrinsic to the investigation itself. The task analyzed is ecologically valid once it took place within a real classroom context, being justified in its agreement with the theme of the course and being inserted in a broader cycle of tasks. Even though the main objective of studies conducted in SLA concerns cognition and is aimed at informing the second language acquisition phenomenon itself, language researchers are often concerned with teaching and learning, given that most of them either were or still are teachers themselves Pica (1994, p. 50)

Moreover, there is an interface between the study of repetition in SLA informed by language processing approaches, and language pedagogy, as stated by many of the authors reviewed (Skehan (1986), Bygate (2001b), Samuda and Bygate (2005) and Ellis (2005), D'Ely 2006). However, as pointed by Ellis (1995), teachers should be critical of the results and assumptions provided by research and from then, make the decisions they find appropriate to foster their students learning and acquisition in the contexts they take place.

When considering the implementation of repetition in the classroom the first probable question to answer is how not to oppose fundamental pedagogical principles such as novelty and variety as well as the improvisation and creativity inherent to speech (Bygate, 2001, Bygate & Samuda, 2005, D'Ely 06). In relation to the latter, Bygate and Samuda (2005) assert that daily life is full of repetitive events (from rehearsals to re-sits), and consequently, repeated language is produced.

A more challenging issue to face, however, is that of engaging learners' attention and interest in repeating a task so they can perceive or make use of the benefits or opportunities triggered by it. Bygate & Samuda, 2005 assert that teachers and students need to be persuaded that novelty and creativity can be products of repetition. And in this study, involving the repetition task in a larger cycle and making it more meaningful by allowing students to discuss the presentations they attended afterwards, I believe, has strongly contributed to its acceptance by the performers. In addition, activities such as the poster carousel (within an academic context), that besides allowing students to improve their performance prepares them for dealing with the demands of a "life-

like" task, may help the students become more comfortable when performing speaking activities, or speaking the language in varied contexts. That may be especially true of the Brazilian context, where opportunities to speak in English (or even improve upon it) are not easily found outside the L2 classroom, and the development of speaking skills is noticeably the hardest.

Finally, repetition is responsive to manipulation, making it an agreeable practice for the classroom. Nevertheless, as said before, the results of this study should be looked at with carefulness when considering whether the effects of immediate repetition had a more meaningful impact on one or the other dimension of oral proficiency (fluency, accuracy and complexity).

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# 7. Appendices

# Appendix A Summary table of studies involving task repetition

| The author, year, and main objective  | The task<br>employe<br>d             | The<br>subjects                                      | The data treatment (measure s employed   | The main findings  |
|---|--------------------------------------|--|--|--|
| 1. Ahmadian and Tavakoli (2010)  The effects of simultaneo us use of careful online planning and task repetition on accuracy, complexity , and fluency in EFL learners' oral production | Video-<br>based<br>narrative<br>task | intermedi<br>ate level<br>Iranian<br>EFL<br>learners | Accuracy: Percentag e of Error- free clauses Percentag e of Correct verb forms  Complexit y: Syntactic complexity (amount of subordinat ion) Syntactic variety: the total number of different grammatic al verb forms used in participant s performan ces. | 1. careful online planning enhances accuracy of EFL learners' oral production. 2. careful online planning enhances the complexity of EFL learners' oral production. 3. task repetition has a positive effect on the fluency of EFL learners' oral production, 4. that task |

repetition Fluency: enhances Rate A complexity (number of of learners' syllables oral production produced and in this per minute) respect it Rate B has the (number of same meaningfu effect on I syllables language per minute production of speech) as careful online planning does 5. the simultaneo us use of careful online planning and task repetition positively influences accuracy, complexity, and fluency.

| 2. D'Ely    | Video-    | 47        | Fluency      | 1. Under    |
|-------------|-----------|-----------|--------------|-------------|
| (2006)      | based     | Intermedi | (speech      | the         |
| The         | narrative | ate EFL   | rate         | repetition  |
| impact of   | task      | learners  | unpruned,    | condition   |
| strategic   |           |           | speech       | there will  |
| planning,   |           |           | rate         | be greater  |
| repetition, |           |           | pruned,      | lexical     |
| strategic   |           |           | number of    | density     |
| planning    |           |           | silent       | than in the |
| plus        |           |           | pauses       | control     |
| repetition, |           |           | per c-unit,  | group.      |
| and         |           |           | tota1        | 2. Under    |
| strategic   |           |           | amount of    | the         |
| planning    |           |           | silence,     | strategic   |
| for         |           |           | number of    | planning    |
| repetition  |           |           | filled       | plus        |
| on          |           |           | pauses,      | repetition  |
| learner's   |           |           | total        | condition   |
| oral        |           |           | amount of    | there will  |
| performa    |           |           | filled       | be greater  |
| nce.        |           |           | pauses,      | lexical     |
|             |           |           | number of    | density     |
|             |           |           | self-        | than in the |
|             |           |           | repairs)     | control     |
|             |           |           | Complexit    | group.      |
|             |           |           | y (number    | 3. Under    |
|             |           |           | of clauses   | the         |
|             |           |           | per c-unit), | strategic   |
|             |           |           | lexical      | planning    |
|             |           |           | density      | for         |
|             |           |           | (weighted    | repetition  |
|             |           |           | lexical      | condition   |
|             |           |           | density)     | there will  |
|             |           |           | Accuracy     | be greater  |
|             |           |           | (number of   | lexical     |
|             |           |           | errors per   | density     |
|             |           |           | clause,      | than in the |
|             |           |           | number of    | control     |
|             |           |           | error-free-  | group       |

|  | 1                            |                 | 1   | 1  |
|--|------------------------------|-----------------|---|--|
| 3. Bygate & Samuda (2005) The impact of task repetition on the use of framing in learners' oral performa nce | Video-<br>based<br>narrative | 14 ESL learners | Lexico<br>grammar<br>Informatio<br>n content<br>Framing | 1. Results are nonsignificant for the lexicogrammar measure. 2. there is a striking impact of repetition on learners' ability to frame the information 3. The impact of repetition triggers important processes such as improvement, reorganization, consolidation of information and reformulation of the speech event as a whole |

|  | 1  |  |  |   |
|--|--|--|--|---|
| 4. D'Ely (2004) The impact of the strategic planning for repetition condition on learners' oral performa nce | Video-<br>based<br>there-<br>and-then<br>narrative | 47<br>Intermedi<br>ate EFL<br>learners | Fluency (speech rate unprunned , pauses/c- unit) Complexit y (clauses/c- unit) Accuracy (errors/c- unit) | 1. Strategic Planning for repetition impacted upon learners' accurate performanc e, without compromis ing either fluency or complexity 2. The combination of planning plus repetition seems to lessen the trade-off effects among the three competing goals of performanc e |

| 5. Lynch and MacLean (2001) The impact of immediat e repetition as a natural condition in an ESP oral course | Poster<br>Presentat<br>ion<br>(carousel<br>session) | 14 (ESP learners)<br>TOEFL<br>400-600 | Qualitative case-by-case analysis of data | 1. More advanced learners showed linguistic improveme nts – a more fluent and accurate performanc e 2. Close relationshi p – level of awareness of learners improveme nts = level of proficiency in the language 3. All participant s showed gains in phonology and lexical access and selection 4. Advanced learners – repetition leading to planned changes in performanc |
|--|---|---------------------------------------|---|---|

|   |   |                               |   | е   |
|---|---|-------------------------------|---|---|
| 6. Bygate (2001) Effects of task repetition on participan ts' performa nce of the same task and the impact of task familiarity on learners' oral performa nce | Picture<br>cued<br>Narrative<br>Interview | 48<br>Pre<br>intermedi<br>ate | Fluency: umber of unfilled pauses per t-unit Accuracy: incidence of errors per t-unit Complexit y: number of words per t-unit | 1. Task type practice – Task performanc e is affected by the nature of the task 2. Task repetition led to significant gains in complexity and fluency in the narrative task 3. Task repetition led to an increase in complexity |

|  |  | but to a<br>decrease<br>in fluency<br>in the<br>interview |
|--|--|---|
|  |  | task 4. Task type effect – effects on fluency, complexity |
|  |  | = accuracy<br>at the level<br>of content                  |

# Appendix B

# Comprehension and Production of Oral English V course plan

UNIVERSIDADE FEDERAL DE SANTA CATARINA CENTRO DE COMUNICAÇÃO E EXPRESSÃO DEPARTAMENTO DE LÍNGUA E LITERATURA ESTRANGEIRAS

#### PLANO DE ENSINO

# **IDENTIFICAÇÃO**

Código e nome da disciplina: LLE 7415 -COMPREENSÃO E PRODUÇÃO ORAL EM LÍNGUA INGLESA V (72 h/a)

Curso: Letras Estrangeira – Bacharelado e Licenciatura

Carga horária: 72 horas/aula – 2<sup>a</sup>s– 16 20hs às 18 00hs e 5<sup>a</sup>s- 1420hs às

1600hs

Professora: Raquel Carolina Souza Ferraz D'Ely

Horário de Atendimento: a combinar CCE - Bloco B - 121

PCC - 36 h/a

#### **EMENTA**

Compreensão e produção de textos orais em língua inglesa de maior complexidade lingüístico-comunicativa e conceitual, com ênfase nos contextos profissionais e acadêmicos.

Para alunos de licenciatura: Seminários críticos acerca de observação de aulas de língua inglesa.

Para alunos de bacharelado: Seminários críticos acerca do uso da língua inglesa em ambientes virtuais relacionados à língua inglesa.

<u>Sugestão da disciplina</u>: Escrita de diários de bordo como instrumento de reflexão acerca do processo de ensino e aprendizado da disciplina.

#### **OBJETIVOS**

- 1. Consolidar as habilidades lingüísticas, comunicativas e discursivas necessárias para a comunicação oral através da compreensão e produção, em língua inglesa, de interações verbais orais argumentativas sobre assuntos gerais e estender essas habilidades para assuntos acadêmicos
- 2. Desenvolver o conhecimento formal do sistema morfológico e sintático da língua inglesa a fim de possibilitar ao (à) aluno (a) a

avaliação crítica e melhoria da sua própria produção oral.

## OBJETIVOS ESPECÍFICOS

- 1. Consolidar a compreensão e produção oral de gêneros textuais/discursivos usados em situações cotidianas e acadêmicas mais específicas (por exemplo: defesa de ponto de vista, argumentação, síntese), com níveis de complexidade mais elaborados.
- 2. Consolidar a capacidade de compreensão de enunciados complexos no que tange à elaboração gramatical, lexical e fonológica em diversos gêneros textuais/discursivos na modalidade oral.
- 3. Consolidar a capacidade de produção oral de enunciados complexos no que tange à elaboração e adequação gramaticais, lexicais e fonológicas.

# CONTEÚDO PROGRAMÁTICO

Compreender, elicitar e fornecer informações sobre atividades e situações ao contexto acadêmico;

Compreender e produzir marcadores do discurso oral no contexto acadêmico;

Compreender e produzir os diversos tipos de apresentação oral, tais como descrição, narração, exposição e argumentação.

# Suporte Lingüístico

Adverbials, adjective order, emphasis: just/really/actually, wh- words, wishes and regrets

participial clauses, prepositional phrases, modals, formal vocabulary, compound adjectives, whatever, however, etc., Simple past – special uses, relative clauses, if-clauses.

# Suporte Estratégico

| Suporte Estrategico  |
|--|
| ☐ Estratégias de expressão oral: estratégias de apresentação oral e de |
| interação em contexto  |
| acadêmico;   |
| ☐ Estratégias de compreensão oral: reconhecimento das idéias           |
| principais, distinção entre opinião e                                  |
| fato, atenção seletiva, solicitação de esclarecimentos, concessão de   |
| turno, reconhecimento das  |
| estratégias de manutenção de turno utilizadas nelo interlocutor        |

#### **METODOLOGIA**

Serão ministradas aulas expositivas dialogadas de caráter temático, utilizando recursos didáticos diversos, como vivências, filmes e textos (acadêmicos) para desencadear discussões na língua estrangeira em torno das temáticas do curso. Também serão efetuados exercícios e atividades individuais e /ou em grupos tanto nas aulas presenciais quanto no ambiente virtual de ensino e aprendizagem a fim de desenvolver a habilidade oral dos alunos, oferecendo também prática gramatical em contextos comunicativos e de uso no contexto acadêmico.

# **AVALIAÇÃO**

A avaliação dos participantes será realizada por meio de sua presença e participação efetiva nas atividades e discussões realizadas durante os encontros presenciais e virtuais, como também por meio de apresentações orais em sala de aula e prova final.

# **BIBLIOGRAFIA BÁSICA**



JONES, C., BASTOW, T. (2003). American Inside Out Advanced. Oxford: MacMillan. [Student's book, teacher's manual, class audio CDs]. HEWINGS, M. (2005). Advanced

Grammar in Use, 2nd ed. Cambridge: Cambridge University Press.

5.2 Complementar

BLACKWELL, A., NABER, T. (2007). Open forum: Academic listening and speaking 3. Oxford: Oxford University Press.

# Appendix C Comprehension and Production of Oral English V detailed course Plan

# COURSE PLAN PROFESSOR: RAQUEL D'ELY LLE 7415 – COMPREENSÃO E PRODUÇÃO ORAL EM LINGUA INGLESA V

# MAIN THEMES: LEARNING AND TEACHING STYLES, LEARNING AND COMMUNICATION STRATEGIES, LIFE STORIES: NARRATIVES AND LEARNERS' BELIEFS, WHAT LIES BEHIND BEING A LEARNER? – AN EYE ON RESEARCH ISSUES

| MEERO                  | THE ACC         | A COUNTY HOUSE    |
|------------------------|-----------------|-------------------|
| WEEKS                  | THEMES          | ACTIVITIES        |
| 17/03, 20/03           | ICE BREAKING    | SOCIALIZING       |
| 24/03 e 27/03          | UNFOLDING       | ON-LINE FORUM     |
|                        | MEANINGS        |                   |
|                        | DISCUSSING      |                   |
|                        | COURSE PLAN     |                   |
|                        | AND THEMES FOR  |                   |
|                        | PCC             |                   |
| 31/03 – <b>03/04</b>   | LEARNING STYLES | QUESTIONNAIRES    |
| (on-line class),       | AND TEACHING    | IN CLASS          |
| 07/04 - 10/04          | STYLES          | READING OF AN     |
| 14/04                  | LEARNING AND    | ACADEMIC          |
| 17/04 (on-line         | COMMUNICATION   | ARTICLES ON       |
| class)                 | STRATEGIES      | LEARNING STYLES   |
| <b>21/04</b> (holiday) | WHAT IMPLIES    | (GUARÁ-TAVARES)   |
| <b>24/04</b> (ON-LINE  | BEING 'THE GOOD | COMPREHENSION     |
| CLASS),                | LANGUAGE        | QUESTIONS         |
| 28/04- <b>01/05</b>    | LEARNER'?       | INDIVIDUAL ORAL   |
| (HOLIDAY)              |                 | PRESENTATIONS ON  |
|                        |                 | LEARNERS'         |
|                        |                 | LEARNING STYLE    |
|                        |                 | WHAT SORT OF      |
|                        |                 | LEARNER AM I? –   |
|                        |                 | AN EYE ON         |
|                        |                 | STRATEGIES (QUIZ) |
|                        |                 | THE GOOD          |
|                        |                 | LANGUAGE          |

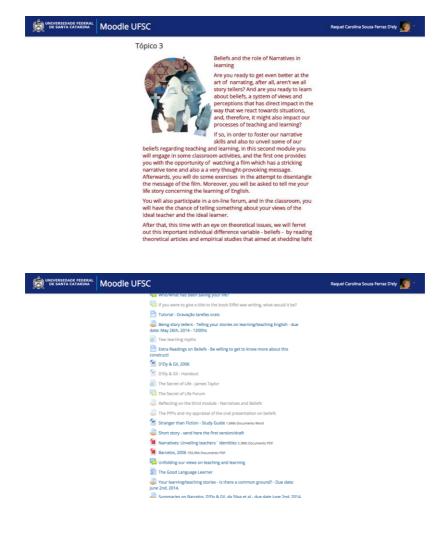
|                                       | T                 | LEADNED (ON LINE   |
|---------------------------------------|-------------------|--------------------|
|                                       |                   | LEARNER (ON-LINE   |
|                                       |                   | SURVEY)            |
|                                       |                   |                    |
| 05/05-08/05                           | LIFE STORIES:     | REACTING TO        |
| 12/05, 15/05,                         | NARRATIVES AND    | VIDEOS             |
| 19/05, 22/05                          | LEARNERS'         | ON-LINE FORUM      |
| 26/05 – <b>29/05</b>                  | LEARNING STORIES, | NARRATIVES AND     |
| (Semana de                            | LEARNERS' BELIEFS | WHO WE ARE:        |
| Letras)                               | AND THE ROLE OF   | STRANGER THAN      |
| 02/06, 05/06                          | NARRATIVES IN     | FICTION (FILM)     |
| 09/06, <b>12/06</b>                   | UNVEILING THEM    | STORY TELLING      |
| (Anpol)                               |                   | TASK – LEARNING    |
| \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ |                   | TO TELL STORIES    |
|                                       |                   | ENGAGING IN        |
|                                       |                   | UNFOLDING          |
|                                       |                   | LEARNING STORIES   |
|                                       |                   | – BUILDING UP A    |
|                                       |                   | QUESTIONNAIRE      |
|                                       |                   | RETELLING          |
|                                       |                   | LEARNERS'          |
|                                       |                   | LEARNING STORIES   |
|                                       |                   | READING OF         |
|                                       |                   | ACADEMIC           |
|                                       |                   | ARTICLES ON        |
|                                       |                   | BELIEFS AND THE    |
|                                       |                   | ROLE OF            |
|                                       |                   | NARRATIVES         |
|                                       |                   |                    |
|                                       |                   | (BARCELLOS, D'ELY  |
|                                       |                   | & GIL, DA SILVA ET |
|                                       |                   | ALL)               |
|                                       |                   | CLASS              |
|                                       |                   | DISCUSSION/ON-     |
|                                       |                   | LINE DISCUSSIONS   |
| 16/06, 19/06                          | YOU AS A          | CLASS DISCUSSIONS  |
| 23/06, 26/06                          | RESEARCHER -      | WHAT LIES BEHIND   |
| 30/06, 03/07                          | CATEGORIZING      | CONDUCTING         |
|                                       | DATA ON           | RESEARCH?          |
|                                       | LEARNERS'         | INTERACTIVE        |
|                                       | LEARNING STORIES  | ACTIVITIES         |
|                                       |                   | READING OF         |

|                                |   | ACADEMIC ARTICLES ON RESEARCH ISSUES (Dorney, 2007) DATA ORGANIZATION AND CATEGORIZATION |
|--------------------------------|---|--|
| 07/07, 10/07,<br>14//07, 17/07 | ORAL PRESENTATIONS BASED ON DATA CATEGORIZATION (producing a poster) (poster carrousel sessions) REFLECTIONS ON THE COURSE AND COURSE DYNAMICS (on board diaries – individual recording task) |  |
| 21/07, 25/07                   | REMEDIAL WORK/<br>END OF THE<br>SEMESTER  |  |

Main tasks – story telling (25%), oral presentation on data categorization (25%) reflections on classroom dynamics (10%), Classroom/on-line participation (15%), reading tasks on the academic articles (25%)

# Appendix D

# Moodle prints of cycle of tasks at Comprehension and Production of $Oral\ English\ V$ - with instructional guidelines



#### LLE7415-05425 (20141) - Compreensão e Produção Oral Língua Inglesa (PCC 36 h/a)

#### Tutorial - Gravação tarefas orais



#### Caros alunos

Aqui segue um tutorial para guiár-los na tarrefa de gravação das atividades orais. Se você tem o sistema Windows, use o gravador de som que está geralmente na barra de programas -acessórios - entretenimento, nessa ordem. Uma vez aberto o programa, clique para começar a gravar.

Se quiser sumentar o tempo, antes de fazer a gravação definitiva, abra o menu de opções e clique em diminuir velocidade sucessivamente, até você perceber que o Ptempo aumentou para no mínimo 140 segundos.

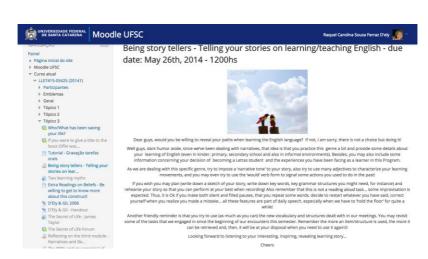
Uma vez gravado o som, salve e aperecerá uma barrinha abaixo do nome do arquivo com oppões. Lá vocé escolhe a qualidade de telefone, para que o arquivo fique mais leve. Uma vez felo saco, vode postate o meseno o laris da atividade obragadria correspondente. Lembre-se de inserir o nome da atividade o o seu no nome ao nomeze o aquivo para facilitar o processos de identificaçõe o composição do mesmo.

EX: Oral Task My learning story\_Nome do aluno.wave

Obs. Procure usar um microfone externo e não um embutido

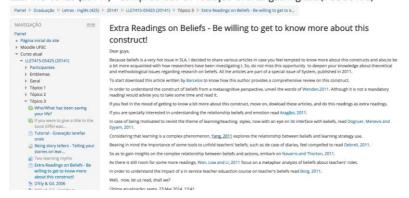
Tutorial elaborado pela designer instrucional Yara Xangô, que atua no Curso de Inglés a distância, bem como no Curso de Conversação II, também a distância da SEP.

Última atualização: terça, 24 Abr 2012, 16:17





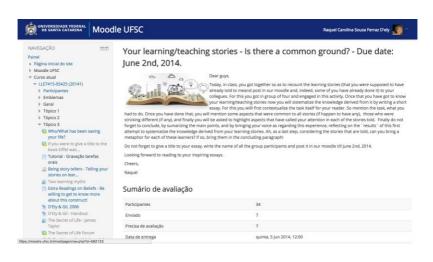
#### LLE7415-05425 (20141) - Compreensão e Produção Oral Língua Inglesa (PCC 36 h/a)





#### LLE7415-05425 (20141) - Compreensão e Produção Oral Língua Inglesa (PCC 36 h/a)

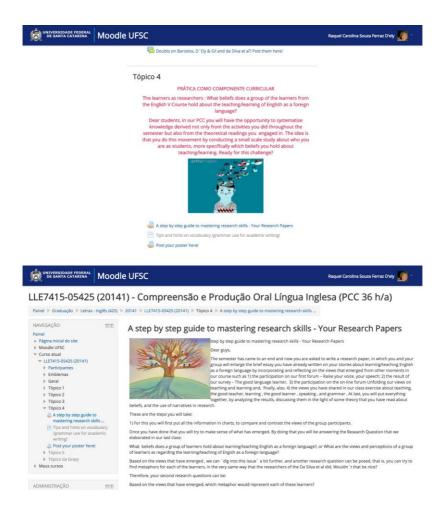






# Appendix E

# Moodle prints of step-by-step instructions to the final essay and the poster presentations at $Comprehension \ and \ Production \ of \ Oral$ $English \ V$





- Administração de tarefas
  - \* Editar configurações Papéis atribuídos loca

  - Verificar permissões

  - \* Logs
- # Restaurar
- \* Avaliação avançada
- \* Ver livro de notas
- Ver/Avaliar todos os envios Fazer o download de todas as tarefas enviadas
- Administração do curso
- Mudar papel para...

2) Once you have done this, you will leave these data aside, and you will write the method session of your study. That is, you will tell your reader the nts that you engaged so as to unfold learners' beliefs

For this first, you will refer to what type of research you are conducting - either qualitative or quantitative research (do not worry, I will help you in this task, and provide information about research types). Then, you will refer to the participants (provide careful information about you, age, time spent learning English, reasons why you have chosen the Lettras Course, etcl, you will refer to be context (our English Y Course) and more specifically to the activities that you have drose the activities, indeed, are the instruments that were used for data collection, old Then, you will refer to how activities that you have done, becau you went about analyzing data, ok?

3) Once this step is over, you will devote attention to the review of the literature sess your summaries, and insert information about the 3 articles you have read. You may go further, and refer to other articles on this topic that you might have read (if you wish).

4 )Once you have done this, you will revisit the results of your systematization to see if you your results "converse with" some of the results of the studies you have read. If so, insert this information in your results session.

5) Now you are ready to write the introduction – establish the territory your study is inserted in (we have already discussed this in our classroom), then establish the niche, and by doing so you will signaling a gap that has to be fulfilled and in this sense you justify the significance of your study, that is you will saying why it is important to unfold learners' beliefs about teaching and learning English as a foreign language. After doing this, refer to the general organization of your Research Paper.

6) Then, it is time for the conclusion session. Recap the objective of your study, refer to the main results and draw general conclusions. You can, for by Tries, it is affect our contribution season's except one objective or you tauty, reter of the imminimization and of any general cut-adaptive. In instance, try to answer the following questions: What can you say about the research experience you have faced? What was the impact for this group of learners to get to know what their beliefs are (if there was any impact after all)? What have you learned about this experience?

7) Once you have done this, we will summarize all this information in the form of a poster. Do not worry, this will be piece of cake, I will also help you

8) As a last task, a poster carrousel task will take place as a means for you to systematize knowledge derived from this research experience

So, now, to aid you in the task of writing the RP, I will provide some hints on how to go about writing and organizing your research papers. Well, to start, a well organized essay is half way to a successful essay.

Start with the introduction, whose main purpose is to move from general discussion of the topic to (a) specific question (s)s, moreover it is through the words written in the introduction that you attract the interest of your audience, it is when you have the opportunity to persuade your read-

There are various ways in which you may start an introduction. You can use ready made chunks such as:



Raquel Carolina Souza Ferraz D'ely

This paper/report discusses and analyzes

The purpose of this paper/report is to...

The aim of this paper/report is to

In this paper I report on

Depending on the length of your research paper, report, these questions might come at the end of the introduction, especially because it should be considered that you really want to seduce your audience. Therefore, a possibility would be:

In this paper, I address the problem of ...

Taking into consideration that we should claim centrality, that is, to show that the topic we are researching is hot, important, and/or problematic, or even that it has been extensively studied we might use 'empathic inversions'. Here are some skeletal examples of strong opening statements:

Recently, there has been growing interest in ...

The possibility of ... has generated wide interest in . The development of ... is a classic problem in ...

The development of ... has led to the hope that ..

The ... has become a favorite topic for analysis...

Knowledge of ... has a great importance for ...

The study of ... has become an important aspect of ...

A central issue in ... is ...

(the) ... has been extensively studied in recent year

Many researchers have recently turned to ...

The relationship between ... and ... has been investigated by many researchers

Many recent studies have focused on ..

Another aspect that has to be tackled in the introduction is to present the moves you will undertake. This can be realized in a phrase or over several a aspect, that has to be clacked in the an obuctor's to breasm to invest you minder take. This can be realized in the sees. Mention how the research paper will be organized, and the purpose of each of the sessions. You can say the follow ction, the present research paper is organized as follows. In the review of the literature, I will address...In the method se







After the introduction, the next session to come is the Review of the Literature, which is a session that you will define the main constructs guiding your study and also some empirical articles that are related to your research theme.

Once the main concept(s) islane) presented you will focus on the Method Session. In this session you will recap the main objective of your study, state the research question(s) perich will have to reflect your objectivel, talk about the context of your investigations, participants, instruments, procedures for other confection of analysis.

Having done that, you will start writing the most important session, which is Data Analysis and Discussion. Sometimes this session can be divided into two. In your case, I would suggest that you briefly discuss the findings as you present them. Finally, It comes time to conclude your study. In the Concluding Session, recapit hem also better of your study, afterly summarize the main findings. You may refer to some implications of your study, In our case, they can be of a personal nature, you can assume a very personal rone, you can talk about the importance of the study for you, for instance), and you can mention some pedagogoal implications, if you wish. Finally, mention some limitations and at the same time signal avenues for further studies. Alt, do not forget the reference session! And that's it!

#### Sumário de avaliação

| Participantes        | 34                        |  |
|----------------------|---------------------------|--|
| Enviado              | 6                         |  |
| Precisa de avaliação | 6                         |  |
| Data de entrega      | sexta, 25 Jul 2014, 00:00 |  |
| Tempo restante       | Tarefa encerrada          |  |

Ver/Avaliar todos os envios

# Appendix F

#### **Consent Form**

UNIVERSIDADE FEDERAL DE SANTA CATARINA CENTRO DE COMUNICAÇÃO E EXPRESSÃO (CCE) PPGI - PROGRAMA DE PÓS GRADUACÁO EM ESTUDOS LINGUÍSTICOS E LITERÁRIOS

# Caro participante

Você está sendo convidado a participar de uma pesquisa sobre produção oral em língua estrangeira. Você foi selecionado por ser aluno do curso de Letras Língua Inglesa e Literatura da Universidade Federal de Santa Catarina e por ter cursado a disciplina *LLE 7415 Compreensão e Produção Oral em Língua Inglesa 5* tendo completado o ciclo de tarefas implementado como *Prática como Componente Curricular* (PCC) da mesma. Este estudo está sendo conduzido por Fabrício Mateus Coêlho, aluno de Mestrado do Programa de Pós-Graduação em Inglês - Estudos Linguísticos e Literários, e orientado pela professora Dra. Raquel Carolina Souza Ferraz D'Ely. Para alcançar os objetivos desta pesquisa precisarei fazer uso das gravações em áudio efetuadas durante a apresentação do PCC, bem como dos questionários respondidos após as apresentações.

Venho por meio desta pedir sua colaboração e autorização para que eu possa analisar e disponibilizar os arquivos de áudio e as repostas ao questionário produzidos durante a disciplina, com o intuíto de sistematizar os resultados das tarefas desempenhadas em sala de aula. Asseguro que os dados fornecidos e coletados serão absolutamente sigilosos e que nenhuma informação que possa identificá-lo será divulgada. Assinando o consentimento pós-informação abaixo, você estará consentindo com o uso dos dados coletados para a pesquisa. Muito Obrigado.

Atenciosamente.

Fabrício Mateus Coêlho - pesquisador

Telefone: (48) 99318858

Endereco de e-mail: fabrymc@gmail.com

# TERMO DE COMPROMISSO

Estou de acordo com o que me foi acima mencionado e expresso aqui minha vontade em disponibilizar os dados para a pesquisa acima referida.

| De acordo: ( ) Sim |             |
|--------------------|-------------|
| Data:              |             |
| Nome por extenso:  |             |
| Assinatura:        | <del></del> |
| RG·                |             |

# Appendix G Post-task questionnaire

# **QUESTIONÁRIO PÓS-TAREFA**

Pesquisa de Mestrado

Mestrando: Fabrício Mateus Coêlho Orientadora: Raquel D'Elv Prezado participante, com este questionário busco melhor conhecer seu contexto de aprendizado de inglês como língua estrangeira, bem como entender sua percepção e opiniões sobre a tarefa de produção oral desenvolvida. Por favor, responda às abaixo sabendo que a confidencialidade auestões informações e de sua identidade é de extrema importância para esta pesquisa. Muito obrigado pela sua participação! Email (letras maiúsculas): Idade: ..... Há quanto tempo você estuda inglês?: Como você percebeu, ou quais suas impressões sobre a tarefa de apresentação do seu poster?: repetiu a tarefa de apresentação. Teça um comentário (como o máximo possível de detalhes) sobre como você se sentiu em cada uma das apresentações em relação ao conteúdo comunicado e às suas escolhas línguísticas: (PROFESSORA, AO INVÉS DE 'ESCOLHAS LINGUISTICAS' POSSO USAR 'PERFORMANCE NA LÍNGUA ESTRANGEIRA'? OU ESTARIA **INFLUENCIANDO A RESPOSTA?)** 1- Primeira apresentação:

| Segunda apresentação:  |
|------------------------|
|                        |
|                        |
| Terceira apresentação: |
|                        |
|                        |
|                        |
|                        |

# Appendix H Responses to the post-task questionnaires

# P#1

Q1: É uma tarefa difícil pra mim fazer apresentações formais em inglês. Não gosto muito de decorar o que vou falar, mas tem sido minha estratégia para poder fazer uma apresentação razoável. Porém, acho que a atividade foi muito interessante pela oportunidade de realizar algo novo e relacionado com as atividades acadêmicas. Creio que o esforço de sintetizar dados e criar um trabalho de pesquisa novo nos faz crescer academicamente. E por último, gostei muito de simular uma apresentação estilo 'SEPEX'. Fechou bem o semestre.

# O2:

- 1: Da primeira vez estava bem nervosa e havia 'decorado' o que iria falar. Não estava pensando no que significavam minhas falas. Só estava reproduzindo minhas memórias. Gaguejei, fiz pausas, usei minha cola e acho que falei rápido demais.
- 2: Logo que comecei tive um lapso de esquecimento mas depois segui com meu 'esquema de fala'. Não estava nervosa e desta vez estava pensando no que estava falando. O que eu 'deveria' dizer fazia sentido para mim.
- 3: Por ultimo, estava mais tranquila. Sabia o que estava dizendo e porque estava dizendo. Pude relaxar e reproduzir meu esforço e trabalho nesta pesquisa. Me senti mais confortável e confiante.

#### P#2

Q1: Foi uma tarefa que me deixou nervosa do início ao fim, mas no decorrer das apresentações foi mais fácil de controlar o nervosismo. Mas apesar disso, reconheço que foi uma ótima experiência, pois tivemos oportunidade de ao menos tentar melhorar nosso discurso na sequência de apresentações.

# Q2:

1: Na primeira apresentação eu fiz o que normalmente faço antes de todas as apresentações: tento reproduzir o que ensaio minutos antes, mas

não deu(da) muito certo, quando cometo o primeiro erro do speaking eu já esqueço tudo que planejei falar.

- 2: Antes de começar a segunda apresentação eu tentei me acalmar e não planejar o que falar, porque parece que quando erro um pouquinho do que planejei falar, fico com um "branco" geral. Tenho impressão que esqueci de falar algumas coisas e adicionei outras. Na tentativa de melhorar minha fala, parece que me confundi mais.
- 3: Gostei mais da última apresentação, pois me senti menos nervosa e acho que o fato de já ter repetido as apresentações ajudou a me sentir mais segura

#### P#3

Q1: Achei a elaboração de posters bem interessante, pois foi uma das poucas atividades bem relacionadas com o mundo real, por exemplo, como sou bolsista PIBIC terei uma terei uma atividade como essa dentro de poucos meses. Apesar de ficar muito preocupada e desconfortável com a câmera, acho importante ter passado pela experiência e no futuro melhorar em eventos similares.

## O2:

- 1: A primeira versão foi muito desconcertante, parecia que eu não sabia o que eu estava falando, "travei" e achei que teria que parar a apresentação. A língua também desapareceu na hora da apresentação, cometi muitos erros e inversões sintáticas. Não consegui desenvolver o que eu queria e no momento mais desesperador tentei ler o pôster, o que não ajudou a recuperar a calma, apenas li algumas sentencas para nao ter que interromper a apresentação.
- 2: A 2a versão foi a melhor, pois nos poucos minutos que tiramos de intervalo percebi que estava tentando falar da maneira que estava escrito no *paper*. Então decidi falar de uma forma mais explícita e tentar fazer uma ordem cronológica. Outra coisa que percebi e que mudei na segunda vez foi que estava olhando para a professora Raquel; ainda que me sinta confortável em sua frente de uma maneira ou de outra ela estava ali para me avaliar; então resolvi olhar para uma amiga que estava me assistindo e que me sinto confortável pois estamos num nível

da língua muito parecidos.

3: A 3a não foi tão ruim quanto a 1a, mas nessa apresentação uma das minhas *beliefs* me atrapalhou, pois alguns colegas com os quais me sinto insegura estavam em sala.

Consegui improvisar, mas fui ficando nervosa novamente e cometi erros (mais que o normal) e recorri ao poster, o que novamente foi uma situação de escolha momentânea, mas a câmera em todas as situações foi muito assustadora.

#### P#4

Q1: Eu estava bem nervosa, mas o ambiente é tranquilo e a professora nos passa segurança. O difícil não foi o assunto, mas falar inglês na apresentação deixou mais difícil.

## Q2:

- 1: Estava nervosa e esqueci a sequência que iria apresentar e a minha improvisação não saiu como deveria.
- 2: Já estava mais calma e na hora sempre sai uma coisa a acrescentar. Acho que foi a melhor das apresentações.
- 3: Não estava nervosa, mas embaralhou um pouco algumas palavras. Mas acho que em todas as apresentações passei o que eu desejava.

#### P#5

- 1: Foi difícil apresentar, senti-me muito nervoso e não achei que falei com eloquência. Por causa do nervosismo, inverti a ordem das falas e gaguejei e pronunciei errada várias palavras, principalmente na hora da leitura do *quote*.
- 2: Para mim foi a melhor. Estava calmo, sem expectativa nenhuma mas me surpreendi. Falei o que precisava falar e dei informações adicionais que não havia dado antes.

3: Por tentar ser melhor que a segunda, a terceira apresentação para mim foi um pouco mais difícil e pior que a segunda, mas muito melhor que a primeira. Apesar de não saber porque achei a terceira um pouco pior, achei que ela fluiu muito bem e foi um final feliz.

#### P#6

Q1: Bastante enriquecedora não só para a nossa prática oral em língua inglesa mas por melhorar nossa oratória.

## Q2:

- 1: Estava um pouco tenso e acho que usei algumas palavras que não pretendia usar, como quando eu disse *students* e depois eu vi que seria melhor usar o termo *participants*. Além do mais eu confundi a palavra *regarding* com *recording*, mas corrigi na mesma hora.
- 2: Estava um pouco menos tenso mas novamente usei palavras que não pretendia usar, pois usei o termo *semester* quando na verdade eu queria me referir mais ao *study*.
- 3: Estava mais tranquilo do que nas apresentações anteriores e não lembro de haver usado algum termo que nao pretendia usar.

#### P#7

Q1: Achei interessante o fato de que todos apresentaram sobre o mesmo assunto, assim sendo possível ver diferentes percepções sobre o mesmo assunto.

- 1: Eu estava um pouco nervoso, com uma leve dificuldade na organização do discurso.
- 2: Mais calmo, tive mais facilidade para poder organizar minhas ideias e escolher palavras que se encaixam melhor no discurso.
- 3: Sem nenhum nervosismo e ja com o discurso formado, houve mais procura por palavras mais agradáveis sobre o assunto do que mudanças

repentinas.

#### P#8

Q1: A tarefa de apresentação do pôster foi um pouco confusa, pois não sabíamos que tipo de trabalho seria realizado e com que objetivo até poucas semanas antes da apresentação. De qualquer forma foi interessante pesquisar sobre o assunto e adquirir conhecimento nessa área.

#### O2:

- 1: Eu, particularmente, estava bastante nervoso para a apresentação. Tentei lembrar as palavras do resumo que eu havia feito para o momento da apresentação.
- 2: Tentei, desta vez, lembrar do que eu tinha acabado de apresentar para não desviar muito do foco, mas acredito que acabei resumindo ainda mais a apresentação.
- 3: Um pouco mais confiante, não me senti nervoso como das outras vezes, e tentei reproduzir o que foi dito na segunda apresentação.

#### P#9

Q1: Acho que o processo de pesquisa (sistematização) foi bem difícil, principalmente devido ao fator tempo. Pessoalmente, trabalhos em grupo são um grande desafio porque o resultado depende do "engagement" de todos.

- 1: Acredito que nesta vez eu fui influenciada pelas apresentações anteriores (dos participantes do meu grupo) tanto quanto ao conteúdo quanto às escolhas linguísticas.
- 2: Não me senti à vontade, pela pressão de tentar repetir o que ja havia falado e tambem por nao querer ler os topicos sobre os quais eu havia planejado falar.

3: Foi a mais difícil e onde mais senti que o fato de ter feito as últimas etapas da pesquisa correndo contra o tempo prejudicou a minha objetividade e confiança em relatar o conteúdo estudado (pesquisado).

#### P#10

Q1: Bom, a apresentação e a sua preparação tornam o assunto mais claro na nossa cabeca, além de dividir informação. O tema também ficou memorizado de forma mais organizada, e eu creio que vou lembrar do que foi proposto e das suas linhas de pensamento por muito mais tempo.

# Q2:

- 1: Na primeira, o que toma conta é a insegurança de saber se apresentar em frente a uma câmera teremos a mesma performance do que se fosse uma apresentação se ela. Ao decorrer da apresentação demorei pra encaixar algumas palavras nas frases, mas aos poucos fui discorrendo e consegui me fazer entender.
- 2: No segundo fiquei com medo de falar de modo diferente e acabei repetindo a ideia várias vezes, me atrapalhei e fiquei mais nervosa, ja na parte do metodo, me tranquilizei e tentei ir mais devagar.
- 3: Fiquei mais tranquila e consegui desenvolver mais detalhadamente. Já que já tinha apresentado duas vezes e tinha conseguido apresentar razoavelmente, fiquei mais confiante. Creio que apresentei melhor na terceira vez, e mal na segunda.

#### P#11

Q1: Acredito ter conseguido realizar uma apresentação razoável. Foi interessante apresentar o pôster três vezes, uma experiência completamente nova, que pode ajudar na reflexão sobre aspectos específicos de cada apresentação.

# Q2:

1: Acho que consegui passar o conteúdo que desejava. Quanto ås escolhas linguísticas, não tinha nada previamente planejado, mas mudaria algumas delas ao repetir a apresentação.

- 2: Um pouco menos de conteúdo, mas creio ter feito melhores escolhas linguísticas.
- 3: Transmiti o conteúdo melhor que nas outras duas apresentações. Acredito ter feito melhores escolhas linguísticas em determinados trechos, mas fiz pausas muito longas e temo ter sido informal uma ou duas vezes

#### P#12

Q1: Eu acho que foi uma experiência boa pelo fato de ter a oportunidade de apresentar três vezes e perceber o desenvolvimento de nossa apresentação e performance.

# Q2:

- 1: Na primeira apresentação o nervosismo atrapalhou, então eu esquecia o que queria falar e como queria falar, mas quando eu olhava para o poster, eu lembrava do que precisava falar. Formulei mal algumas frases e tentei reformulá-las logo em seguida.
- 2: Consegui falar com mais calma e talvez com mais clareza, mas esqueci parte do conteúdo. Acredito que já tinha melhor noção de quais palavras usar e em quais momentos.
- 3: Acredito que consegui melhorar minha performance, tanto na questão dos conteúdos quanto nas minhas escolhas linguísticas. Ainda assim, cometi alguns erros que poderiam ter sido evitados.

#### P#13

Q1: Eu achei interessante perceber que mesmo repetindo o mesmo assunto, ainda assim tive dificuldade em algumas partes, apesar de que estruturalmente creio que minha fala melhorou ao longo das apresentações.

#### O2:

1: Eu não estava tão preparado, então tive que pensar bastante no

assunto e não tanto em como falar.

- 2: Consegui pensar menos no assunto e mais em como fala-lo. Mesmo assim, meu pensamento estava menos interessado na estrutura da apresentação.
- 3: Pensei mais na estrutura da minha apresentação, e talvez por isso tenha descuidado um pouco de como devia falar. Creio que a estrutura estava mais coesa nessa última, mas é possível que tenha havido mais pausas.

#### P#14

Q1: Uma apresentação não é exatamente a mesma, mas os principais pontos foram sempre elucidados.

- 1: Esta trouxe uma expectativa maior do que as outras porque foi a primeira vez que expus o tópico.
- 2: Quase não houve expectativa porque o assunto havia sido recentemente abordado.
- 3: Foi cansativa e, apesar de ser uma audiência diferente, eu me senti repetitiva. No entanto, nesta apresentação eu consegui concluir melhor o tópico do que nas outras.

# Appendix I Speech data – unpruned words

# EXAMPLE TRANSCRIPTS FROM UNPRUNED WORD COUNT OF PARTICIPANTS' PRESENTATIONS (THREE PARTICIPANTS)

#### CODING:

Partial and morphologically wrong// words are marked with a period "."

XXXX = omitted name/last name of participant

Participant P. #3 Round 1

Speech time: 1.31 min

Number of unpruned words: 125

ok in the last section the conclusion some considerations and contribution we can analyzed

first one is about the first contact with the en. learning english that the students started to build this beliefs and through this moment they startedly with this. this beliefs and this can influence positively or negatively this and since that time this started to change the way that they the. their own experiences and after we perceived this that the. these students changed ther. ther. their beliefs and about some experiences kno. knowledge and reflections about the issue

and the last one is the rele. relevance of the study because we started to identify these beliefs can be positive steps for us as future teachers and our learning processes too Participant P. #3 Round 2

Speech time: .59 min

Number of unpruned words: 104

based on this activities we can perceive that the beliefs were builded from the first contact this this participants with the english learning

then the believes started when they had their first contact with the language but we can perceive that the the this beliefs are mutable and while they had new experiences and faced them these beliefs were changed sometimes to good beliefs or or bad and another thing we perceive this how this study was was important to their own perception because this could improve the their learning process and change thi. the beliefs as future english teachers and as learners too

Participant P. #3

Round 3

Speech time: .59 min

Number of unpruned words: 91

ok now conclusion

based on these activities we could perceive that the this beliefs were build from the first time that these participants face this new language when they started to learning English and the the second thing we can perceive wa were the this beliefs are mutable then while this participants face new things face news new challenges their beliefs were changes too and this is a quite relevance because it's it's about the importance of reflections about the beliefs as learners English as future teachers too this is it

Participant P. #7 Round 1

Speech time: 2 min

Number of unpruned words: 296

so the method we started the objective of theof the small scale study of qualit. qualitative nature is to unfold as he said the what are the beliefs that the group of students hold

and to analyze to to to reach a conc. a a result or a conclusion the students took part in in different activities from telling their life stories about related to English participating in forums and and a few others other activities that were done

the group analyzed was composed of four participants all us four and each participant at at some point in the study had to retell their story so we all so the whole group could analyze and reach a consensus you could say about wha. how it affected how he was affected and how how it changed in the course of the of the of the class and the

so we found a few results that we we I thought that we could mention that was halfhalf of the group actually have lived abroad and the other half hasn't hadn't so we kin. we kinda found a a difference in the experience

however the the overall result for each person was we could we could say it was the same

sothat was it regarding that

and and then theand also a chart was built with the with the information available for for the students with age how many tim. how long did he stay if ever stay in in a foreign country and if if had any mot. motivation special motivations to to enter join the the letras course and beyond after all that we could analyze it and come to a overall result and that's how pretty much we got to do results

Participant P. #7

Round 2

Speech time: 1.15 min

Number of unpruned words: 176

so this is a small scale study with a qualitative nature and its objective as XXXX said is to is to evaluate the beliefs held in the beginning of the class and then at **a.** as as it progresses to see how they changed or not so the way we evaluated those if those beliefs changed beliefschange or not

we have all participants took place in online forums and told them the their life story narratives and after that was before actually the stu. the study took place and thenthe group got together and ret retold those stories so we couldall analyze it and see point. points that could not be been seen before

and in addition to that a chart was built with the informations information such as age how long they stay abroad if ever motivation for joining the course and a few other data and after evaluating that chart we could come u. come to a overall result to a in a a a gross number for all the group

Participant P. #7

Round 3

Speech time: 1.06 min

Number of unpruned words: 151

this is a small scale study of qualitative nature and with the objective as XXXX said to unfold the views of regarding beliefs held by the students and to do so we the students took place in a in a few acti. in a couple of I think it was three activities that later were used and and analyzed so we could reach a final conclusion

those activities were participation in online forums telling their their life story narratives and also a a a few recordingrecord. recorded sessions on Moo. posted on Moodle so after those those those data were analyzed we we also built aa chart containing the general information regarding the student with. such as age how long it stayed abroad and and if ifit had

any motivations to join the course and with all that data we could come to reach a final conclusion

Participant P. #13
Round 1

Speech time: 1.14 min

Number of unpruned words: 118

on our method session we this is a qualitative study first we we go. gathered ou. our information about how we learned our our average our mean age is thirty two and all of us learned in different ways XXXX learned abroad for instance XXXX learned mainly through in private English schools and I learned mostly in on in college on. only

so we proceed. how we analyzed our data we we we got two three different sources from Moodle oral narratives our oral narratives regarding our learning experience forum discussions in fact two forum discussions and with this we proceeded to to understand what we we thought different and what we thought it was almost the same

Participant P. #13 Round 2

Speech time: 1.27 min

Number of unpruned words: 160

what how we did thi. this how we proceeded to to res.to do this research

it's a qualitative piece of study we first gathered ou.our information thr. from the three of us and so to to have a base for instance our main mean age is thirty two and we have different learning experiences for instance I learned mainlyth in here in college and in in school and XXXX went abroad and learned there and XXXX learned mostly in in English private schools so we are different and and maybe we we think different but that's how that's what we want to to to see we also got tha. some

sources in moodle our oral narratives we we analyzed our oral narratives regarding learningex.our learning experiences and two forum discussing discussing issues on learning English so we we can we can could proceed to analyze the data and see what we had different or in common

Participant P. #13

Round 3

Speech time: 1.35 min

Number of unpruned words: 176

so how we proceeded to research our beliefs

first this is a qualitative piece of study and what we did was first gather information from our from the three of us and we already with that we alreadysaw that we had very different experiences in learning I learned mostly in school XXXX learned mostly in English private schools and XXXX went abroad and learned there so we had different experiences

and so how we perceived our learning experience then and how we perceived we we should learn we or someone should learn it's probably different so that's what we were trying to to to know we proceeded to our our data was mostl. mostly gather in moodle we get got our oral narratives the three of usspoke about about their our learning experiences and we also had forum discussions regarding issue re. with issues regarding learning and teaching English

so with that we we could analyze our our beliefs and see what we had in common what we had what in what we didn't

# Appendix J

# Speech data – pruned words and repairs EXAMPLE TRANSCRIPTS FROM PRUNED WORDS AND SELF-REPAIR COUNTS OF PARTICIPANTS' PRESENTATIONS (THREE PARTICIPANTS)

#### CODING:

- \* Repair outcomes are boldfaced in the pruned transcription
- \* Repaired constructions, pruned out of the transcriptions, are listed at the header

Participant P. #5

Round 1

Speech time: 2.01 min

Number of pruned words: 245 Number of self-repairs: 14

data analysis - of the - the - the - a. - the - differen. - a - sh. - has to - they don't thin. all - ne. - more - in. ins.

about the **data analysis** I have to say that because **the** participants of **this** research study **in the** same college at the same course and **at** the same class they answers is already the same they have the same beliefs almost the same **about the** good teacher they think that a good teacher has to know how to share knowledge and Lily thinks that a good teacher has to be patient and has to know **differentiate** one student from another and lara thinks that too but she adds that a good teacher has to have **a** good relationship with the students and charlie thinks all this thing too but **he** adds that a good teacher **has to** know how to catch the attention of the students about going abroad to learn english **they all don't think that it's necessary** to go abroad to learn english but if you live in a country that just speak portuguese that is our case you have to need **more** willing to learn english because you don't live in a country that speaks english that don't live english

and about the public school they all don't think that you can learn english just going to the public school and take class of the english

#### because is **insufficient**

and this image that we brought is a cut of our forum and is quotes about the beliefs that our peers have about teaching and learning English and I will read some quotes

Participant P. #5

Round 2

Speech time: 1.46 min

Number of pruned words: 224 Number of self-repairs: 13

I - the - the - has to - a an an student - form. - has - the attenti. - they don't think that just go. - a - to - of the - and learning

ok about the data analysis before **I** say **the** comparison about **the** result I have to say that all the participants take the same course at the same class at the same college so they answers is are already the same all the participants think that a good teacher **has to** know how to share knowledge but Lara thinks that a good teacher has to be patient and know to differentiate **a studentfrom** another and lara thinks that too but she adds that a good teacher **has** to have a.. good relationship with the students and Charlie thinks all too but he adds that a good teacher has to know how to.. catch **the attention** of the students about the public school **they all don't think that just going** to **the** public school you will learn English you have **to** put more effort to it and about the going abroad they all don't think that you have to go abroad to.. learn english but if you live in a country like ours in Brazil you have to put more effort to learn English you have to be more willing to learn English

and here is some quotes **of our** forum.. and these quotes of our peers of our class is about teaching **and learning** English and I will read some quotes to you

Round 3

Speech time: 1.46 min

Number of pruned words: 239 Number of self-repairs: 11

all the - ha. - think that think.s - a - school - i. - you you - more more effort - in in this - that - st. -

ok before I talk about the data analysis I have to say to you that **all the** participants study at the same course at the same college at the same class so their answers can be very similar

and about the good teacher they all think that the good teacher has to know how to share knowledge and Lilly thinks that a good teacher has to be patient andknow how to differentiate a student from another Lara thinks that too but she adds that a good teacher **has** to have a good relationship with the students and charlie **thinks that** too but he adds that **a** good teacher has to catch the attention of the students and about the public school they don't think that just going to the public school you will have a good english because a public **schools** are very poor in this area

and about going abroad to learn English they all don't think that you have to go abroad to learn English but if you go it would be more easy but if you stay in Brazil like is our case you can learn English but you will need put more effortin this area

and the image that we bought to you is a cut of our forum and is quotes **of** our **students** and some quotes about teaching and learn English of our peers and I will read some to you

Participant P. #9

Round 1

Speech time: 2.18 min

Number of pruned words: 211 Number of self-repairs: 19

how to how - the - the - we - a - the on. - to - we - it - the - learning experience - to - by - by - we - we - has helped us tha. wi. - this is - a a -

as a conclusion our group settled some beliefs basically that one of them is about living abroad and **how** this has changed throughout **the** analysis

#### of **these** questions we have made

we side with Barcellos when.. it says that reflecting upon our own experiences and on our other years experiences we could reach a different conclusion from our belief that was before like the best way or the only way to learn English properly is living abroad and another aspects that we have highlighted is that by revising our views we could decide whether to change or not our beliefs if that was the case but in fact the whole process have helped us to be aware of what we think about our past experiences and how to use and be fostered by those experience and basically by this reflection and most of we have concluded that by previewing our learning processes and exchanging these experiences among us we faced this research process which was quite long and new for us and this task will probably help us believe in further experiences as researchers because we have to go through all this process in English and exchanging experiences and so this can be a helpful tool for us in the future

Participant P. #9

Round 2

Speech time: 1.53 min

Number of pruned words: 175 Number of self-repairs: 14

we we - may - to - the - we we - this - bee - in - wha. - we - a new - ac. - wee wee - to

and a conclusion **we** reached some beliefs that we had in common and like they already told that living abroad **may** be the only or the best way **to** learn English as a foreign language

and considering **our** previous experiences for the four of us **we** could see that **this** belief may not **be** valid for us anymore and that's how reflection is so important **in** this study which means that being aware of **what** were our learning experiences and sharing this data **we** could come with **new** approaches and new ideas about how our learning process is experienced

and in addition we also believed that classes **activities** may not be very helpful but as XXXX said as **we** are pushed **to** be engaged and to do so after we do we realize that it help us in our oral and writing and reading skills

and furthermore this experience as a researcher participant may be very helpful for us in the future as teachers researchers or because it was a very fruitful experience for us

Participant P.#9

Round 3

Speech time: 1.19 min

Number of pruned words: 136 Number of self-repairs: 7

to to our - in class - and - to - i. - in - that we. we may but

as a conclusion we think that we side with barcelos when he says that reflection is an important tool for us to look to our learning experiences and then rebuild them according **to new** experiences that we are exposed for instance we used to believe that oral and reading writing activities **in english class** at university could not really help you to improve **and** then after revisiting our stories and basically reflecting on them could help us **to** have a new view of that so **it** happened some belief change for us

and also through the process of being a participant researcher we also realized that the whole process itself helped us in improving **not also in** english but also in our skills **that may be** very helpful in the future for us and that's it

Participant P. #12

Round 1

Speech time: 2.07 min

Number of pruned words: 209 Number of self-repairs: 14

regarding - in - mul. - the - a an positive im. -im. - learning over this esp. - all - further readings - furthing. readings - about - more - raising learners' awareness is crucial to - to changer.

I should conclude our study as XXXX has already said we could see that one of the common beliefs hold by your participants is that practice is really important to improve our skills mainly as in this course the focus

is the oral skill so we can see that practice is important to develop our oral skills

also as XXXX said about the fear it's important that students can overcome the fear of making mistakes

also it shows that the participants hold some individual beliefs as **regarding** this English **in** public schools vocabulary and **multimedia** resources

the research made us reflect about our own beliefs and I guess it had a positive impact on us because since we are learning english and learning to teach it can be useful to change our beliefs and perspectives over this experience

**of course** we had some limitations such as lack of time and also if we had more participants maybe we could have more data to analysis and **we believe readings** would be nice to know **more about** the topic and to be **more** aware of beliefs

just to conclude as posited by Barcellos

sorry I'm nervous

raising learners awareness on their beliefs systems is a initial conditionfor changes to occur

Participant P. #12

Round 2

Speech time: 1.50 min

Number of pruned words: 169 Number of self-repairs: 8

up - the beliefs - the student - the fear of mak. the - such a. - and as learning and learning to i. in - it help - learner -

summing it all **up** we could see that **some of the beliefs** that **the students** had in common were related to practice they believe that practice in classroom is important to improve their oral skills also **overcomingthe fear of making** mistakes was a recurrent topic in their narratives and besides that they hope some particular beliefs **regarding** English in public schools vocabulary and multimedia resources

this research made us reflect about our own beliefs as learning and students of English and it might help us in our learning and learning to teach experiences

we had some limitations in our study such as lack of time and maybe if we had more participants then we could have more data to analyze and to find out more about beliefs hold by students when learning English and we think that maybe further readings on the topic could also help us finally as posit by Barcellos raising **learners'** awareness on their belief system is initial condition for changes to occur thank you

Participant P. #12 Round 3 Speech time: 1.41 min Number of pruned words: 159 Number of Self-Repairs: 6 the - we. - an - over - an. - wou.

as to conclude our study we could see that one of the common beliefs hold by our participants is the practice as a way to improve our skills like oral skills

and also overcoming the fear of making mistakes is a recurrent aspect in their narratives

some of **the** individual beliefs that we could see in this study **were** about vocabulary multimedia resources and English in public schools this research made us reflect about our own experiences as learners and learning to to teach students

we think it had a positive impact on us and it has some limitations such as lack of time and we believe if we had more participants then we could have more data to analyze and also further readings about the topic would help us to.. improve our research

to conclude we have an statement by Barcellos which is raising learners' awareness on their belief system is the initial condition for changes to occur

#### Appendix K

# Speech data – errors EXAMPLE TRANSCRIPTS FROM ERROR COUNT OF PARTICIPANTS' PRESENTATIONS (THREE PARTICIPANTS)

#### CODING:

XXXX = omitted name/last name of participants # = missing item counted as error

\* (error/ possible solution) are shown at the header. Errors are boldfaced in the transcripts.

Participant P. #6 Round 1

Speech time: 1.10 min Number of errors: 2

learner/ learners - missing "and"/ and

Error-free clauses: 16

hello my name is XXXX XXX XXX and our group is composed of XXXX XXX XXXX and XXXX and the title of our study is the misbelief of genera. generality unfolding English foreign language students' views

so ehn I'm goin. I'm going to begin by the introduction right eh this ahn study developed by our group and proposed by professor Raquel seeks to investigate our main beliefs regarding the English learning process and how these beliefs have been changed throughout the semester

according to d. D'Ely ehn beliefs are ideas based on perceptions of specific experiences specific contexts at a given period of time which influence one's own understanding decisions and actions and our research question is what beliefs does a group of **learner** hold about learning # teaching English as a foreign language so now XXXX is going to talk about ahn the method of our study

Round 2

Speech time: .58 min Number of errors: 2

perception/ perceptions - missing "and"/ and

**Error-free clauses: 13** 

hello my name is XXXX XXX XXX and our group is composed of four students me XXXX XXX XXXX and XXXX

the title of our study is the misbelief of generality unfolding

English foreign language students' views

so I'm going to start by the introduction

eh our study seeks to investigate our main beliefs eh recor. eh regarding ehn the English learning process and how this changes and how these beliefs have been changed throughout the semester

according to DEly ehn ide. ehn beliefs are ideas based on **perception** of specific experiences and specific contexts at a given period of time which influence one's own understanding decisions and actions

and our research question is what beliefs does a group of learners hold about learning # teaching English as a foreign language

so now XXXX is going to discuss the method section

Participant P. #6 Round 3

Speech time: 1.01 min Number of errors: 4

which/ who - experience/ experiences - missing "and"/ and -

discuss about/ discuss Error-free clauses: 12

hello my name is XXXX XXX XXX and our group is composed of four participants **which** are me XXXX XXX XXXX and XXXX and the title of our study is the misbelief of generality unfolding English foreign language students' view so I'm going to begin by the introduction and.. our study seeks to investigate our main beliefs regarding

the English learning process and how our beliefs have been changed throughout this study and this semester so according to eh DEly ehn beliefs are ideas based on perceptions of specific **experience** and specific contexts at a given period of time which influence one's own understanding decisions and actions

and our research question is: what beliefs does a group of learn. learners hold about learning # teaching English as a foreign language

and now XXXX is going to discuss ahn about the method section

Participant P. #7
Round 1
Speech time: 2 min
Number of errors: 13

are the beliefs/ the beliefs are - and/ to - missing "them"/ them - he was/ they were - it/ they - was/ were - hadn't/ hasn't - experience/ experiences - also a chart was/ a chart was also - did he stay/ they stayed - stay/ stayed - missing "they"/ they - a/ an

Error-free clauses: 24

ahn so the method we started ..the objective of the s. of the small scale study of qualit. qualitative nature is to unfold as he said the.. what ar. **are the beliefs** that the group of students ahn hold and to analyze to to to reach a conc. a.. a.. result or a conclusion hm.. ehn.. the students took part in ahn in different activities from ahn telling their life stories about ahn related to english participating in forums and ahn **and** a few others other activities that were done

the group analyzed was composed of four participants all us four and each participant at at some point in the study had to retell their story so we all so the whole group could araly analyze # and reach a consensus you could sayabout wha. how it affected how he was affected and how ahn how it changed in the course of the of the class and th. ahn

so ahn we found a few results that we we i thought that we could mention that **was** ahn half o. half of the group actually have lived abroad and the other half hasn't **hadn'**t so we kind. we kinda found a.. a difference in the **experience** 

however the the overall result for each person was.. we could eh. we could say it was the same so that was it regarding that and ahn and then a. th. and also ahn a chart was built with the.. with the information available for for the students w. with age ahn how many tim. how long did he stay if ever stay in in a.. foreign country and ahn if if # had any mot. motivation t. special motivations to.. to.. enter join the the letras course and beyond a. that all that we could analyze it and come to a overall result and that's how pretty much we got to do results

Participant P. #7

Round 2

Speech time: 1.15 min Number of errors: 7

change/ changed - took place in online forums/ took part in online forum discussions - it/ them - been/ have been - the/ no article -

stay/ had stayed - a/ an Error-free clauses: 16

ahn so this is a small scale study with ahn qualitative nature and its objective as XXXX said is to.. is to.. evaluate the beliefs held in the beginning of the class and then at.. a. as. as it progresses to see how they changed or not

so the way  $\emptyset$  we evaluated those ahn if those beliefs changed beliefs t. **change** or not

we have ahn all participants **took place in ahn online forums** and told them the. their life story narratives and after that was before actually the stu. ahn the study took place and then w. the group got together and ret. retold those stories so Ø we could a. all analyze **it** and see ahn point. points that could not be **been** seen before

and in addition to that ahn a chart was built with **the** informations information such as ahn age how long they **stay** abroad ahn if ever ahn motivation for joining the course and a few otter o. other data and after evaluating that chart we could come u come to **a** overall result to a-in-a-a a gross ahn number for all the group

Participant P. #7 Round 3

Speech time: 1.06 min Number of errors: 3

took place/ took part - it/ she or he - it/ he or she

**Error-free clauses: 15** 

ahn this is a small scale study of qualitative nature and with the objective as xxxx said to ahn unfold the views of.. regarding beliefs held by the students and to do so we the students took **place** in a.. in a few acti. in a.. ehn couple of ah. i think it was three activities that later were used and a. and a. and analyzed so ø we could reach a final conclusion those activities were ahn participation in online forums ahn telling their st. their life story narratives and also a. a. a few recording record. recorded sessions on Moo. posted on Moodle so ahn that those a. those ahn those data were analyzed we we also built a shart a chart containing the general information regarding the student with. ahn such as age how long **it** stayed abroad and ahn and if if **it** had any motivations to join the course and ahn with all that data we could come to reach a final

Participant P. #10

Round 1

conclusion

Speech time: 1.56 min Number of errors: 5

this/ these - the/ no article - take place/ taken place - fiction/

fictional - at/ on

Error-free clauses: 24

so ahn our ar. article is stories and beliefs investigating students' beliefs based on their narratives

so considering the field of applied linguistics considering the field of second language acquisition we have the idea of beliefs what are beliefs

beliefs are certain views that a group or a person hold to be true ahn in the classroom **this** beliefs may change the whole process of learning and teaching so it is very important to keep in mind the idea ehn of beliefs so we can improve our learning and **the** teachers can improve their teaching

ahn this.. this awareness is important like I already said ahn you can ahn we can have a new perspective and we can be better at the process of learning and teaching ehn according to Barcelos

so ahn this is a.. qualitative study ahn in consonance with Dornyei ahn it has **take** place ahn at the university at UFSC *Universidade Federal de Santa Catarina* at the English five course the oral English five course and we have ahn **fiction** names we have Sara Annabel and Oscar

and.. and this ahn this.. the data was collected ehn based on the activities **at** Moodle eh recording and writing activities ahn ahn the.. data was put together.. we built charts and we compared each other.. each other's beliefs we are the researchers and we are the participants

Participant P. #10

Round 2

Speech time: 1.41 min Number of errors: 5

they/ the - take place/ taken place - missing "the"/ the - the/ no

article - other/ other's
Error-free clauses: 22

so ahn in the field of applied linguistics ahn considering the area of second lang. language acquisition ahn we have the idea of beliefs

so what are beliefs

beliefs are c. ahn certain views ahn or or conceptions that a certain group or people hupd. hé. hold to be true ahn so ahn the beliefs **they** teachers and learners' beliefs may change the way ø they teach and their learning so it is important to raise that discussion to rai. to be aware that

we have beliefs and to improve ourselves based on ahn that idea that perspective that.. we have beliefs so ahn this awareness has to be raised ahn.. according to Barcelos ahn so we can improve ourselves ahn then.. the.. this is a.. qualitative study in consonance with Dornyei

it has **take** place at the at UFSC univer. Universidade Federal de Santa Catarina at # English five course or English five ehn we have fictional names Sarah Annabel and Oscar ahn we.. the data was collected based on activities that were posted on Moodle oral and writing activities ahn **the** Moodle is our ehn virtual environment so the data was collected and put together we built charts and we compared each others' beliefs and each **other** information

Participant P. #10

Round 3

Speech time: 1.28 min Number of errors: 7

the/ no article - there/ that - this/ these - missing "and"/ and - this/

it - collect/ collected - at/ on Error-free clauses: 18

so considering the field of applied linguistics and considering **the** second language acquisition we have the idea of beliefs so what are beliefs

beliefs are views or conceptions **there** a group or a person hold to be true

ahn **this** beliefs ahn may have some impact on the teaching and learning process

so ahn according to Barcelors i. Barcelos it is important to be aware of our own practices ehn based on our beliefs so we can improve ourselves as learners # as ahn eh as teachers ahn this was a qualitative study a study ahn according to Dornyei and ahn **this** took place at UFSC *Universidade Federal de Santa Catarina* at English five course.. oral english five course and we have.. we are the researchers and we are the participants ahn we

have fictional.. fictional names ehn Sarah Annabel and Oscar so.. ahn this ahn the data was **collect** based on the activities that were posted on.. ahn on a forum **at** Moodle ahn Moodle is our virtual environment

ahn the data was collected and we put all the information together we built charts and we compared each others' information

#### Appendix L

### Speech data – rater appraisal EXAMPLE TRANSCRIPTS FROM EXTERNAL RATER APPRAISAL (ONE PARTICIPANT)

P#2 round 1: 1.45 min

| Participant: P#2  |          | P1         |                        |
|-------------------|----------|------------|------------------------|
| Total Number of M | istakes: | 20         |                        |
| Kinds of          | Syntax   | Morphology | Lexical Choice (word – |
| Mistakes:         |          |            | order)                 |
| Number of         | 14       | 2          | 4                      |
| Mistakes:         |          |            |                        |

ok ehn in the data ehn analysis and discussion section we showed four beliefs that were more current ehn in the study ehn we identified that the participants think that ah-eh talked about the role of self-confidence plays in effective english learning ehn according to their narratives they think that the lack of selfconfidence affects the moment \( \phi \) they are going to speak and generally in the class this is related to to the people who are listening to them they feel more comfortable to talk in f and express their ideas in front of some classmates and generally they don't feel so comfortable to talking in front of ehn new students that come from teste de nivelamento ehn the second belief is the role of orientations and first contacts with the language plays in influencing the learning process in the long run according to their reports they say that bad and good experiences on learning in the past affects the ehn the learning process at this moment so affecting the results of the ehn the english learning the author belief is *sees* the role of reflection about the language acquisition as positive for english s for english students they believe that reflecting about language acquisition ehn is helpful ehn they think that this can help them to improve on learning and eh teaching too

and the last belief is the role of nativeness that is the fact that foreign foreigners will never be as proficient as native speakers this was the four *beliefs most recurrent* 

P#2 round 2: 1.40 min

| Participant: P#2  |          | P2         |                        |
|-------------------|----------|------------|------------------------|
| Total Number of M | istakes: | 14         |                        |
| Kinds of          | Syntax   | Morphology | Lexical Choice (word – |
| Mistakes:         |          |            | order)                 |
| Number of         | 9        | 2          | 3                      |
| Mistakes:         |          |            |                        |

ehn we identified four beliefs on the data analysis ehn the first is the role  $\emptyset$  self-confidence plays in affecting english learning

ahn the three participants believe that the lack of self-confidence influences the moment ø they speak in the class and this is generally related to people who are listening to them

they feel more comfortable to talk and express their ideas in english in front of some classmates and generally they don't feel so comfortable ehn in speaking english ehn in front of the new students that come from *nivelamento* test

the second belief is the role or ah the role  $\emptyset$  orientations and first contacts with the language plays in influencing the learning process in the long run

the participants ehn reported that bad and good experiences on learning that they had in the past affects their learning now

ehn the sec the third belief is the role of reflection about language acquisition as positive for language students

they believe that reflecting about the language process is helpful so they can improve their learning and also teaching in the future and the last belief eh is the role of nativeness that is the fact that

foreigners foreigners will never be profi will be as proficient as native speakers

they think that ehn for e *foreign english* speakers will never ehn achieve

the same level of proficiency of native speakers this were the beliefs

P#2 round 3: 1.39 min

| Participant: P#2  |           | P3         |                        |
|-------------------|-----------|------------|------------------------|
| Total Number of M | listakes: | 14         |                        |
| Kinds of          | Syntax    | Morphology | Lexical Choice (word – |
| Mistakes:         |           |            | order)                 |
| Number of         | 11        | 0          | 3                      |
| Mistakes:         |           |            |                        |

ahn we identified four beliefs on the data analysis the first belief is the role of se self-confidence plays in affecting english learning

the participant eh the participants believe that the lack of self-confidence affects the moment  $\emptyset$  ther they speak in english and generally i in the classroom this is related to the people who listen to them

they feel more comfortable to talk in english and express themselves in english in front of some classmates and they don't feel so so comfortable to to speak in english in front of new classmates that come from *nivelamento* test

the second belief is the role  $\emptyset$  orientations and first contacts with the language plays in influencing the learning process in the long run ah they reported on the narratives that their bad and good experiences on learning in the past affects their process ehn *at this time* at the pace it affects the result of their learnings eh nowadays

the third belief is the role of reflection about language acquisition seen as positive for english students

they think that reflecting about the language acquisition process eh can be very helpful

eh it can help them to improve their learning and teaching in the future and the last belief is the role of nativeness that is the fact that foreign foreign foreigners will never be as proficient as native speakers these were the four beliefs ø we identified

#### Appendix M

#### Speech data – c-units and clauses

# EXAMPLE TRANSCRIPTS FROM C-UNIT AND CLAUSE SEGMENTATION OF PARTICIPANTS' PRESENTATIONS (THREE PARTICIPANTS)

#### CODING:

C: = C-unit

//: = new clause (finite or nonfinite)
XXXX = omitted name of participant

\* The number of clauses is indicated at the beginning of the c-unit.

Participant P. #1

Round 1

Speech time: 1.35 min Number of C-Units: 13 Number of Clauses: 22

- 1 C: ahn Hello good afternoon my name is XXXX
- 1 C: this is XXXX
- 1 C: this is XXXX
- 2 C: and our study title is //Identifying Beliefs View and Perceptions of English as a Foreign Language Learners and Future Teachers
- 2 C: ahn for support our main ideas //we we based our research on D'Ely and Gil and Barcelo's ahn concepts about beliefs
- 3 C : ahn according to them //beliefs are the way //  $\mbox{\it Ø}$  we thinking feeling and perceiving the world
- 5 C: so we aim with this research ahm //to try answer the guided

quest.. the gu.. the guided questions //which is ahn //what are the views and perceptions of a group of learners //as regarding the learning teaching of english as a foreign language

- 2 C: ahn in order to investigate the students' beliefs //we adopted a qualitative approach
- 1 C: and the data collection were done during the oral english class five at the letras program
- 1 C: ahn three students participated
- 1 C: and they were the researchers too
- 1 C: and finally wee we collected from we collected ua our data from one narrative two forums and one questionnaire
- 1 C: so now XXXX will talk a little bit more about analysis and discussion.

Participant P. #1

Round 2

Speech time: 1.28 min Number of C-Units: 12 Number of Clauses: 24

- 1 C: so hello my name is XXXX
- 1 C: this is XXXX
- 1 C: this is XXXX
- 2 C: and our study title is //Identifying Beliefs View and Perceptions of English as a Foreign Language Learners and Future Teachers
- 2 C: ahn for support our main ideas //we I forgot everything we we base our research on D'Ely and Gil and Barcelo's ahn concepts about beliefs

- 5 C: ahn //according to them beliefs are the way //  $\emptyset$  we thinking // $\emptyset$  we feeling //and  $\emptyset$  we perceiving the world
- 5 C: and we aim with this research //to try answer our question guided //which is //ahn what are the views and perceptions of a group of learners //as regarding the learning teaching of english as a foreign language
- 2 C: ahn in order to investigate the student beliefs //we adopted a qualitative approach
- 1 C: and the data colle. collection were done during the oral english class five
- 2 C: three students participated //and were the researchers too
- 1 C: and our researchers' tools were one narrative two forums and one quest. questionnaire
- 1 C: and now XXXX will talk a little bit about the analysis and discussion.

Round 3

Speech time: 1.20 min Number of C-Units: 12 Number of Clauses: 24

- 1 C: so hello my name is XXXX
- 1 C: this is XXXX
- 1 C: this is XXXX
- 2 C: aand our study title is //Identifying Beliefs View and Perceptions of English as a Foreign Language Learners and Future Teachers
- 2 C: ahn for support our main ideas //we base our research on D'Ely and Gil and Barcelo's concepts about beliefs

- 5 C: according to them //beliefs are the way // $\emptyset$  we thinking // $\emptyset$  we feeling //and  $\emptyset$  we perceiving the world
- 5 C: so.. we aim with this research //try to answer the.. our question guided //which is // what are the views and perceptions of a group of learners //as regarding the learning teaching of english as a foreign language
- 2 C: in order to investigate the student beliefs //we adopted a qualitative approach
- 1 C: ahn data collection were done during the oral english class five
- 2 C: and.. three students participated and //were the researchers too
- 1 C: and finally our researchs tools were one narrative two forums and one questionnaire
- 1 C: and now XXXX will talk about analysis and discussion

Round 1

Speech time: 2.45 min Number of C-Units: 24 Number of Clauses: 42

- 2 C: ahn well the data analysis was conducted in aa.. a language-based fashion wee.. //according to Dornyei two thousand and seven
- 1 C: we used verbal coding
- 1 C: we transcribed the audio recordings
- 1 C: wee.. all the we put all the data into textual form
- 1 C: and well the data analysis occurred basically in two moments
- 1 C: first wee.. we put together all the information

- 1 C: we built charts
- 1 C: we summarized it all up
- 1 C: and then wee.. s. we sat down together
- 1 C: and wee.. analyzed
- 4 C: we highlighted the.. the parts of the transcriptions //which we thought //ø could reveal some of our beliefs //given that we are also the participants
- 3 C: and then while analyzing these narratives //we could notice //that us three.. we three have in common.. a common belief related to practice, the importance of practice
- 1 C: we all see.. we wal. we all have a notion of practice as a.. as a sa key factor in the learning of another language
- 1 C: ahn.. and then wee.. I.. I can't present you the quotes directly
- 1 C: but we have them anyway
- 5 C: ahn another common belief ahn  $/\!/\!\phi$  the three of us share is  $/\!/$ that is that it is important for learners to have the courage to.. not the c. ...  $/\!/$ i would say the courage to.. make mistakes  $/\!/$ when necessary
- 1 C: the.. the courage not to be afraid of making mistakes
- 1 C: and also ehn besides these common beliefs th. these beliefs in common the participants also hold individual beliefs
- 2 C: Sarah believes //that it is possible to learn english in a public school
- 1 C: all of the participants in the studies ehn had English classes at public school
- 4 C: aand.. Sarah believes this //that it is possible really to learn

english properly in a public school //which is ahn quite the opposite from //what seems to be the general belief among public school teachers and students themselves ahn...

- 2 C: Annabel also believes //that vocabulary a g. a good knowledge of vocabulary is needed to develop good writing skill
- 2 C: aand.. Oscar believes //that other tools such as video-games and music may be.. powerful tools in the propess. in the process of learning English
- 3 C: he says in the narrative //that in his teenage years most of his knowledge in english came from playing video-games //and listening to music watching movies

Participant P. # 11

Round 2

Speech time: 3.10 min Number of C-Units: 21 Number of Clauses: 49

- 3 C: well the data analysis was conducted in a language-based fashion //as is described in Dornyei two thousand and seven //because we the researcher participants we used verbal coding
- 1 C: we transcribed all the.. all the data from the audio into textual form
- 1 C: so first we put all this information into verbal form
- 1 C: and we made charts
- 1 C: we put it all together
- 1 C: then we sat down and analyzed it
- 2 C: we.. highlighted the parts of the trans. of the audio transcripts //which seemed to indicate certain beliefs on part of all stu. on.. on part of us

- 4 C: and then wee.. based on //what we highlighted //we tried to find the beliefs //Ø wee.. we have
- 5 C: ahn by analyzing these narratives //we could notice // that the three of us hav. a belief //Øthe three of us have in common is //that.. practice ahn is a really imp. is really important in the process of learning a language ahn
- 1 C: ah.. the three participants Sarah Annabel and Oscar said that throughout their narratives
- 4 C: aand.. another aspect another belief //Ø we share in common iis.. //the notion of.. ahn the courage not n. the courage to make mistakes being something //that the student has ahn..
- 3 C: like.. it is necessary for the student //not to be afraid of making the mistakes  $//\emptyset$  he has to make
- 3 C: ahn besides thiis.. c. these beliefs ahn  $//\emptyset$  the researcher participants have in common we can also know //that.. they hold individual beliefs
- 2 C: Sarah for instance believes //that.. it is possible to.. successfully learn English in a public school
- 1 C: the three students studied in public school
- 4 C: aand.. ahn it iis.. quite interesting to know that //because the general belief among students and teachers in public schools seems to be //that it isn't it i. that it is not possible to learn english properly in a public school //and that the students are uninterested in learning English
- 3 C: aand Annabel seems to believe //that.. it is necessary to have a good vocabulary //to.. develop good writing skill
- 2 C: ahn she says in the narrative //that she didn't develop her writing skill because of this limitation of vocabulary
- 2 C: and finally oscar believes //that.. multimedia tools such as videogames and music and movies may be of great assistance in the process

of learning English as a foreign language

- 4 C: he says //that throughout his teenage years ahn watching movies //and listening to music //really helped him especially regarding vocabulary
- 1 C: but it also improved his knowledge of grammar rules and syntax

Participant P. # 11

Round 3

Speech time: 2.49

Number of C-Units: 20 Number of Clauses: 49

- 2 C: well data analysis was language-based //as shown in Dornyei two thousand and seven
- 1 C: ahn we used verbal coding
- 1 C: we transcribe. all the dat. all the data compiled from the audio recordings
- 1 C: aand.. data analysis occurred in two moments
- 1 C: first wee.. put together all the data
- 2 C: wee.. built charts containing the information //regarding the students' learning trajectories
- 4 C: and then wee.. highlighted the important parts of the... the p. the parts of the transcripts //which we thought //Ø could.. indicate the beliefs //Ø these students hold
- 2 C: the students us //because we are the researcher participants
- 5 C: ahn then by analyzing these narratives these data //that we put together //we could notice //that there are two beliefs ahn.. //Ø our group holds in common

- 1 C: first that.. practice is crucial in the process of learning ahn a foreign language such as english
- 1 C: ahn the three participants ahn said that
- 6 C: and also the.. the second belief //ø we hold in common is //that.. it is necessary for the student to be willing //and to have the courage //to... to be active //in trying to overcome the fear of making mistakes in class
- 2 C: it is necessary for the students not to be afraid of making these mistakes //which are so.. natural to the process of learning a language
- 2 C: aand.. besides these.. co. these beliefs //ø they... which we hold in common we also hold individual beliefs
- 4 C: ahn first Sarah she believes //that.. it is possible to.. learn english correctly in a public school ahn //which is the opposite of //what seems to be the general belief among teachers and among students in public schools
- 3 C: most of most of the people in public schools believe //that.. the students aren't interested in the subject //and that.. they just can't learn english
- 1 C: you can't
- 3 C: you have to.. take a private course //or go abroad //or or anything like that
- 4 C: ahn Annabel s-seems to believe //that.. it is-s mandatory for the learner to have good vocabulary //to write well //to develop good writing skills
- 3 C: and finally Oscar believes //that.. multimedia tools such as movies //and ahn listening to music and video-games may be an invaluable aid in this journey of learning English

Round 1

Speech time: 1.09 min Number of C-Units: 10 Number of Clauses: 22

- 1 C: yeah ahn wee.. wee.. don't share many beliefs
- 1 C: we don't have many beliefs in common
- 3 C: but we have some //LIKE for example.. XXXX and XXXX they believe //that age ahn is a problem for ehn especially for pronunciation ahn
- 4 C: XXXX and I uu XXXX.. wee.. believe //that ahn a posture //that we assume //when we speak english it's very important for the learning process
- 2 C: aand ah. XXXX and XXXX.. believe //that ahn ahn the learner shouldn't ahn get too attached to the native language for learning
- 4 C: but overall we all believe //that ah. our process of learning //which was ah effective somehow //even though they were very different
- 1 C: we have very different stories
- 3 C: and we also believe //that this process should continue //because wee., have this self-criticism
- 2 C: and we believe //that we can improve more
- 1 C: that's it

Round 2

Speech time: 1.12 min Number of C-Units: 9 Number of Clauses: 19

- 1 C: and our results ahn ehn wee.. we don't share the.. the same beliefs
- 3 C: but ahn.. ahn XXXX and XXXX they believe //that age is a problem //ahn concerning.. ahn pronunciation
- 3 C: ahn XXXX and I ehn believe //that ahn //being attached to a native language might be a problem to for learning
- 4 C: aand ahn XXXX and I we believe //that ahn it's important to assume a good posture //when we are learning english //to be brave to speak the language
- 1 C: and ehn yeah we have very different ahn stories of our learning process ehn
- 2 C: but we all believe //that ahn we managed to learn english somehow
- 1 C: and ahn we can communicate in English
- 3 C: but we also believe  $//\emptyset$  there's always this improvement //that we need to look for
- 1 C: aand that's it

Round 3

Speech time: 1.04 min Number of C-Units: 6 Number of Clauses: 22

- 5 C: so //what we have in common //is //that ahn XXXX and XXXX they believe //that age is a.. problem ahn //when learning a foreign language especially for pronunciation
- 3 C: XXXX and I we believe //that ahn //when the student is too attached to the native language ahn he or she might have a problem
- 4 C: aand ah XXXX and I ahn believe //that is important to assume ahn aa.. good posture //when you speak english //to be brave.. to use a foreign language
- 4 C: and ahn ehn we all believe //that these different ahn ways of learning english //that we had in our ahn life story ehn they were somehow effective //and ahn because we can communicate in English
- 2 C: and ah we also believe //that we need to improve
- 4 C: buut.. we learned with each other //that other ways are also effective //not just the way //that each of us learned

## Appendix N

## Scores and units (all measures)

# MEASURE SCORES AND THE SEGMENTS AND UNITS USED IN THE CALCULATION

|                 | FLUENC'          | Y - VALL     | JES BY N  | MEASURE        |                         |
|-----------------|------------------|--------------|-----------|----------------|-------------------------|
|                 |                  | #1           | SPEECH    | RATE UNF       | RUNED                   |
| PARTICI<br>PANT | PRESENT<br>ATION | TIME<br>min. | TIME sec. | WORDS<br>- UNP | WORDS/M<br>INUTE<br>SRU |
|                 | round 1          | 1.35         | 95        | 174            | 109.89                  |
| P#1             | round 2          | 1.28         | 88        | 166            | 113.18                  |
|                 | round 3          | 1.2          | 80        | 156            | 117                     |
|                 | round 1          | 1.45         | 105       | 236            | 134.85                  |
| P#2             | round 2          | 1.4          | 100       | 219            | 131.4                   |
|                 | round 3          | 1.39         | 99        | 221            | 133.93                  |
|                 | round 1          | 1.31         | 91        | 125            | 82.41                   |
| P#3             | round 2          | 0.59         | 59        | 104            | 105.76                  |
|                 | round 3          | 0.59         | 59        | 91             | 92,54                   |
|                 | round 1          | 1.24         | 84        | 156            | 111.42                  |
| P#4             | round 2          | 0.57         | 57        | 117            | 123.15                  |
|                 | round 3          | 0.57         | 57        | 117            | 123.15                  |
|                 | round 1          | 2.01         | 121       | 267            | 132.39                  |
| P#5             | round 2          | 1.46         | 106       | 250            | 141.5                   |
|                 | round 3          | 1.46         | 106       | 258            | 146.03                  |
|                 | round 1          | 1,10         | 70        | 141            | 120.85                  |
| P#6             | round 2          | 0.58         | 58        | 134            | 138.62                  |
|                 | round 3          | 1,01         | 61        | 138            | 135.73                  |
|                 | round 1          | 2            | 120       | 296            | 148                     |
| P#7             | round 2          | 1.15         | 75        | 176            | 140.8                   |

|      | round 3 | 1.06 | 66  | 151 | 137.27 |
|------|---------|------|-----|-----|--------|
|      | round 1 | 1.07 | 67  | 158 | 141.49 |
| P#8  | round 2 | 0.44 | 44  | 104 | 141.81 |
|      | round 3 | 0.46 | 46  | 94  | 122.6  |
|      | round 1 | 2.18 | 138 | 242 | 105.21 |
| P#9  | round 2 | 1.53 | 113 | 194 | 103    |
|      | round 3 | 1.19 | 79  | 152 | 115.44 |
|      | round 1 | 1.56 | 116 | 212 | 109.65 |
| P#10 | round 2 | 1.41 | 101 | 190 | 112,87 |
|      | round 3 | 1.28 | 88  | 173 | 117.95 |
|      | round 1 | 2.45 | 165 | 362 | 131.63 |
| P#11 | round 2 | 3.1  | 190 | 398 | 125.68 |
|      | round 3 | 2.49 | 169 | 347 | 123.19 |
|      | round 1 | 2.07 | 127 | 241 | 113.85 |
| P#12 | round 2 | 1.5  | 110 | 193 | 105.27 |
| P#12 | round 3 | 1.41 | 101 | 165 | 98.01  |
|      | round 1 | 1.14 | 74  | 118 | 95.67  |
| P#13 | round 2 | 1.27 | 87  | 160 | 110.34 |
|      | round 3 | 1.35 | 95  | 176 | 111.15 |
|      | round 1 | 1.09 | 69  | 127 | 110.43 |
| P#14 | round 2 | 1.12 | 72  | 113 | 94.16  |
|      | round 3 | 1.04 | 64  | 134 | 125.62 |
|      |         |      |     |     |        |
|      |         |      |     |     |        |

|             |             | FLUE                     | NCY                      | - VALU                | ES BY ME                      | ASURE                      |  |                           |  |  |
|-------------|-------------|--------------------------|--------------------------|-----------------------|-------------------------------|----------------------------|--|---------------------------|--|--|
| PAR<br>TICI | PRE<br>SEN  | 7                        | _                        | EECH  <br>RUNEI       |                               | CORF                       | #3 NUMBER OF<br>SELF-<br>CORRECTIONS<br>PER C-UNIT |                           |  |  |
| PAN TAT     |             | TI<br>M<br>E<br>mi<br>n. | TI<br>M<br>E<br>se<br>c. | WO<br>RDS<br>-<br>PRU | SPEEC<br>H RATE<br>PRUNE<br>D | REFO<br>RMUL<br>ATION<br>S | C -<br>UN<br>IT<br>S                               | REF<br>ORM/<br>C-<br>UNIT |  |  |
|             | roun<br>d 1 | 1.3<br>5                 | 95                       | 163                   | 102.94                        | 4                          | 13   | 0.3                       |  |  |
| P#1         | roun<br>d 2 | 1.2                      | 88                       | 162                   | 110.45                        | 3                          | 12   | 0.25                      |  |  |
|             | roun<br>d 3 | 1.2                      | 80                       | 154                   | 115.5                         | 1                          | 12   | 0.08                      |  |  |
|             | roun<br>d 1 | 1.4<br>5                 | 10<br>5                  | 227                   | 129.71                        | 6                          | 14   | 0.42                      |  |  |
| P#2         | roun<br>d 2 | 1.4                      | 10<br>0                  | 210                   | 126                           | 5                          | 13   | 0.38                      |  |  |
|             | roun<br>d 3 | 1.3<br>9                 | 99                       | 212                   | 128.48                        | 6                          | 13   | 0.46                      |  |  |
|             | roun<br>d 1 | 1.3<br>1                 | 91                       | 116                   | 76.48                         | 7                          | 7  | 1                         |  |  |
| P#3         | roun<br>d 2 | 0.5<br>9                 | 59                       | 97                    | 98,64                         | 6                          | 5  | 1.2                       |  |  |
|             | roun<br>d 3 | 0.5<br>9                 | 59                       | 85                    | 86.44                         | 6                          | 6  | 1                         |  |  |
|             | roun<br>d 1 | 1.2<br>4                 | 84                       | 138                   | 98.57                         | 9                          | 10   | 0.9                       |  |  |
| P#4         | roun<br>d 2 | 0.5<br>7                 | 57                       | 100                   | 105.26                        | 7                          | 8  | 0.87                      |  |  |
|             | roun<br>d 3 | 0.5<br>7                 | 57                       | 103                   | 108.42                        | 9                          | 8  | 1.12                      |  |  |
|             | roun<br>d 1 | 2.0                      | 12<br>1                  | 245                   | 121.48                        | 14                         | 14   | 1                         |  |  |
| P#5         | roun<br>d 2 | 1.4<br>6                 | 10<br>6                  | 224                   | 126.79                        | 13                         | 16   | 0.81                      |  |  |
|             | roun        | 1.4                      | 10                       | 239                   | 135.28                        | 11                         | 16   | 0.68                      |  |  |

|      | d 3         | 6   | 6        |     |        |     |    |      |
|------|-------------|-----|----------|-----|--------|-----|----|------|
|      | roun        | 1,1 |          |     |        |     |    |      |
|      | d 1         | 0   | 70       | 136 | 116.57 | 3   | 8  | 0.37 |
|      | roun        | 0.5 |          |     |        |     |    |      |
| P#6  | d 2         | 8   | 58       | 127 | 131.37 | 3   | 8  | 0.37 |
|      | roun        | 1,0 |          |     |        |     |    |      |
|      | d 3         | 1   | 61       | 135 | 132.78 | 1   | 8  | 0.12 |
|      | roun        |     | 12       |     |        |     |    |      |
|      | d 1         | 2   | 0        | 234 | 117    | 34  | 13 | 2.61 |
|      | roun        | 1.1 |          |     |        |     |    |      |
| P#7  | d 2         | 5   | 75       | 151 | 120.8  | 13  | 7  | 1.85 |
|      | roun        | 1.0 |          |     |        |     |    | _    |
|      | d 3         | 6   | 66       | 127 | 115.45 | 12  | 6  | 2    |
|      | roun        | 1.0 | 07       | 400 | 444.00 | 4.4 | •  | 4.00 |
|      | d 1         | 7   | 67       | 128 | 114.62 | 11  | 9  | 1.22 |
| D#0  | roun        | 0.4 | 4.4      | 00  | 405.45 | •   | 0  | 0    |
| P#8  | d 2         | 4   | 44       | 92  | 125.45 | 6   | 2  | 3    |
|      | roun        | 0.4 | 40       | 04  | 405.05 | _   | 0  | 2.5  |
|      | d 3         | 6   | 46<br>13 | 81  | 105.65 | 5   | 2  | 2.5  |
|      | roun<br>d 1 | 2.1 | 8        | 211 | 91.73  | 19  | 10 | 1.9  |
|      | roun        | 1.5 | 11       | 211 | 91.73  | 19  | 10 | 1.9  |
| P#9  | d 2         | 3   | 3        | 175 | 92.92  | 14  | 7  | 2    |
| 1 #3 | roun        | 1.1 | 3        | 173 | 32.32  | 14  |    |      |
|      | d 3         | 9   | 79       | 136 | 103.29 | 7   | 6  | 1.16 |
|      | roun        | 1.5 | 11       | 100 | 100.20 | •   | -  | 1.10 |
|      | d 1         | 6   | 6        | 193 | 99.82  | 8   | 21 | 0.38 |
| P#1  | roun        | 1.4 | 10       | 100 |        |     |    |      |
| 0    | d 2         | 1   | 1        | 172 | 102.17 | 9   | 14 | 0.64 |
|      | roun        | 1.2 |          |     |        |     |    |      |
|      | d 3         | 8   | 88       | 160 | 109.09 | 6   | 16 | 0.37 |
|      | roun        | 2.4 | 16       |     |        |     |    |      |
|      | d 1         | 5   | 5        | 321 | 116.72 | 17  | 24 | 0.7  |
| P#1  | roun        |     | 19       |     |        |     |    |      |
| 1    | d 2         | 3.1 | 0        | 361 | 114    | 12  | 21 | 0.57 |
|      | roun        | 2.4 | 16       |     |        |     |    |      |
|      | d 3         | 9   | 9        | 329 | 116.8  | 7   | 20 | 0.35 |
|      | roun        | 2.0 | 12       |     |        |     |    |      |
|      | d 1         | 7   | 7        | 209 | 98.74  | 14  | 11 | 1.27 |

| P#1 | roun |     | 11 |     |        |    |    |      |
|-----|------|-----|----|-----|--------|----|----|------|
| 2   | d 2  | 1.5 | 0  | 169 | 92.18  | 8  | 10 | 0.8  |
|     | roun | 1.4 | 10 |     |        |    |    |      |
|     | d 3  | 1   | 1  | 159 | 94.45  | 6  | 9  | 0.66 |
|     | roun | 1.1 |    |     |        |    |    |      |
|     | d 1  | 4   | 74 | 93  | 75.4   | 13 | 10 | 1.3  |
| P#1 | roun | 1.2 |    |     |        |    |    |      |
| 3   | d 2  | 7   | 87 | 129 | 88.96  | 15 | 15 | 1    |
|     | roun | 1.3 |    |     |        |    |    |      |
|     | d 3  | 5   | 95 | 145 | 91.57  | 13 | 17 | 0.76 |
|     | roun | 1.0 |    |     |        |    |    |      |
|     | d 1  | 9   | 69 | 123 | 106.95 | 3  | 10 | 0.3  |
| P#1 | roun | 1.1 |    |     |        |    |    |      |
| 4   | d 2  | 2   | 72 | 110 | 91.66  | 3  | 9  | 0.33 |
|     | roun | 1.0 | ·  | ·   |        |    |    |      |
|     | d 3  | 4   | 64 | 131 | 122.81 | 2  | 6  | 0.33 |

|               | ACC            | CURAC          | Y - VA                 | LUES BY              | MEAS                                      | URE             |                     |  |
|---------------|----------------|----------------|------------------------|----------------------|---|-----------------|---------------------|--|
| PART<br>ICIPA | PRESE<br>NTATI |                | NUMBI<br>RORS I<br>UNI | PER C-               | #5 PERCENTAGE OF<br>ERROR-FREE<br>CLAUSES |                 |                     |  |
| NT            | ON             | ER<br>RO<br>RS | C -<br>UNI<br>TS       | ERRO<br>R/C-<br>UNIT | ERR<br>OR<br>S                            | CLA<br>USE<br>S | %<br>ERROR-<br>FREE |  |
|               | round 1        | 11             | 13                     | 0.84                 | 11  | 22              | 68.18               |  |
| P#1           | round 2        | 15             | 12                     | 1.25                 | 15  | 24              | 54.16               |  |
|               | round 3        | 15             | 12                     | 1.25                 | 15  | 24              | 54.16               |  |
|               | round 1        | 15             | 14                     | 1.07                 | 15  | 34              | 67.64               |  |
| P#2           | round 2        | 10             | 13                     | 0.76                 | 10  | 32              | 71.87               |  |
|               | round 3        | 9              | 13                     | 0.69                 | 9   | 31              | 70.96               |  |
|               | round 1        | 13             | 7                      | 1.85                 | 13  | 12              | 33.33               |  |
| P#3           | round 2        | 10             | 5                      | 2                    | 10  | 15              | 53.33               |  |
|               | round 3        | 11             | 6                      | 1.83                 | 11  | 14              | 42.85               |  |
|               | round 1        | 14             | 10                     | 1.4                  | 14  | 17              | 35.29               |  |
| P#4           | round 2        | 11             | 8                      | 1.37                 | 11  | 12              | 50                  |  |
|               | round 3        | 7              | 8                      | 0.87                 | 7   | 13              | 46.15               |  |
|               | round 1        | 17             | 14                     | 1.21                 | 17  | 35              | 62.85               |  |

| P#5  | round 2 | 16 | 16 | 1    | 16 | 28 | 57.14 |
|------|---------|----|----|------|----|----|-------|
|      | round 3 | 9  | 16 | 0.56 | 9  | 32 | 84.37 |
|      | round 1 | 2  | 8  | 0.25 | 2  | 17 | 94.11 |
| P#6  | round 2 | 2  | 8  | 0.25 | 2  | 15 | 86.66 |
|      | round 3 | 4  | 8  | 0.5  | 4  | 16 | 0.08  |
|      | round 1 | 13 | 13 | 1    | 13 | 35 | 68.57 |
| P#7  | round 2 | 7  | 7  | 1    | 7  | 23 | 69.56 |
|      | round 3 | 3  | 6  | 0.5  | 3  | 18 | 83.33 |
|      | round 1 | 6  | 9  | 0.66 | 6  | 18 | 66.66 |
| P#8  | round 2 | 6  | 2  | 3    | 6  | 12 | 58.33 |
|      | round 3 | 1  | 2  | 0.5  | 1  | 13 | 92.3  |
|      | round 1 | 13 | 10 | 1.3  | 13 | 28 | 57.14 |
| P#9  | round 2 | 10 | 7  | 1.42 | 10 | 25 | 1.94  |
|      | round 3 | 8  | 6  | 1.33 | 8  | 18 | 61.11 |
|      | round 1 | 5  | 21 | 0.23 | 5  | 29 | 82.75 |
| P#10 | round 2 | 5  | 14 | 0.35 | 5  | 26 | 84.61 |
|      | round 3 | 7  | 16 | 0.43 | 7  | 25 | 0.31  |
|      | round 1 | 6  | 24 | 0.25 | 6  | 42 | 85.71 |
| P#11 | round 2 | 6  | 21 | 0.28 | 6  | 49 | 87.75 |
|      | round 3 | 2  | 20 | 0.1  | 2  | 49 | 95.91 |
|      | round 1 | 11 | 11 | 1    | 11 | 31 | 80.64 |
| P#12 | round 2 | 10 | 10 | 1    | 10 | 23 | 65.21 |
|      | round 3 | 7  | 9  | 0.77 | 7  | 21 | 66.66 |
|      | round 1 | 5  | 10 | 0.5  | 5  | 15 | 66.66 |
| P#13 | round 2 | 8  | 15 | 0.53 | 8  | 21 | 66.66 |
|      | round 3 | 7  | 17 | 0.41 | 7  | 25 | 72    |
|      | round 1 | 2  | 10 | 0.2  | 2  | 22 | 90.9  |
| P#14 | round 2 | 2  | 9  | 0.22 | 2  | 19 | 89.47 |
|      | round 3 | 0  | 6  | 0    | 0  | 22 | 100   |

|                       |                   | COM                      | PLE    | XITY -                         | VALUE                      | S B          | Y MEAS                       | SURE                           |             |                          |
|-----------------------|-------------------|--------------------------|--------|--------------------------------|----------------------------|--------------|------------------------------|--------------------------------|-------------|--------------------------|
| PA                    | PRE               | #6 CLAUSES<br>PER C-UNIT |        |                                |                            | WOF<br>R C-L |                              | #8 MEAN<br>LENGTH OF<br>CLAUSE |             |                          |
| RTI<br>CIP<br>AN<br>T | SEN<br>TAT<br>ION | L<br>C < U の E の         | 0.081  | CLA<br>USE<br>S/C-<br>UNI<br>T | WO<br>RD<br>S -<br>PR<br>U | 0 . טヹゖ      | WO<br>RD<br>S/C-<br>UNI<br>T | WO<br>RD<br>S -<br>PR<br>U     | CL<br>AUSES | WO<br>RDS<br>/CLA<br>USE |
|                       | roun<br>d 1       | 22                       | 1<br>3 | 1.69                           | 163                        | 1            | 12.5<br>3                    | 163                            | 22          | 7.4                      |
| P#1                   | roun<br>d 2       | 24                       | 1<br>2 | 2                              | 162                        | 1<br>2       | 13.5                         | 162                            | 24          | 6.75                     |
|                       | roun<br>d 3       | 24                       | 1<br>2 | 2                              | 154                        | 1 2          | 12.8<br>3                    | 154                            | 24          | 6.41                     |
|                       | roun<br>d 1       | 34                       | 1<br>4 | 2.42                           | 227                        | 1<br>4       | 16.2<br>1                    | 227                            | 34          | 6.67                     |
| P#2                   | roun<br>d 2       | 32                       | 1<br>3 | 2.46                           | 210                        | 1            | 16.1<br>5                    | 210                            | 32          | 6.56                     |
|                       | roun<br>d 3       | 31                       | 1<br>3 | 2.38                           | 212                        | 1            | 16.3                         | 212                            | 31          | 6.83                     |
|                       | roun<br>d 1       | 12                       | 7      | 1.71                           | 116                        | 7            | 16.5<br>7                    | 116                            | 12          | 9.66                     |
| P#3                   | roun<br>d 2       | 15                       | 5      | 3                              | 97                         | 5            | 19.4                         | 97                             | 15          | 6.46                     |
|                       | roun<br>d 3       | 14                       | 6      | 2.33                           | 85                         | 6            | 14.1<br>6                    | 85                             | 14          | 6.07                     |
|                       | roun<br>d 1       | 17                       | 1<br>0 | 1.7                            | 138                        | 1<br>0       | 13.8                         | 138                            | 17          | 8.11                     |
| P#4                   | roun<br>d 2       | 12                       | 8      | 1.5                            | 100                        | 8            | 12.5                         | 100                            | 12          | 8.33                     |
|                       | roun<br>d 3       | 13                       | 8      | 1.62                           | 103                        | 8            | 12.8<br>7                    | 103                            | 13          | 7.92                     |
|                       | roun<br>d 1       | 35                       | 1<br>4 | 2.5                            | 245                        | 1<br>4       | 17.5                         | 245                            | 35          | 7                        |
| P#5                   | roun<br>d 2       | 28                       | 1<br>6 | 1.75                           | 224                        | 1 6          | 14                           | 224                            | 28          | 8                        |
|                       | roun              | 32                       | 1      | 2                              | 239                        | 1            | 14.9                         | 239                            | 32          | 7.46                     |

|          | d 3         |       | 6 |      |     | 6            | 3          |      |       |       |
|----------|-------------|-------|---|------|-----|--------------|------------|------|-------|-------|
|          | roun<br>d 1 | 17    | 8 | 2.12 | 136 | 8            | 17         | 136  | 17    | 8     |
|          | roun        | - ' ' | 0 | 2.12 | 100 |              | 15.8       | 100  | - ' ' | 0     |
| P#6      | d 2         | 15    | 8 | 1.87 | 127 | 8            | 7          | 127  | 15    | 8.46  |
|          | roun        |       |   |      |     |              | 16.8       |      |       |       |
|          | d 3         | 16    | 8 | 2    | 135 | 8            | 7          | 135  | 16    | 8.43  |
|          | roun        | 25    | 1 | 0.00 | 004 | 1            | 40         | 00.4 | 25    | 0.00  |
|          | d 1<br>roun | 35    | 3 | 2.69 | 234 | 3            | 18<br>21.5 | 234  | 35    | 6.68  |
| P#7      | d 2         | 23    | 7 | 3.28 | 151 | 7            | 7          | 151  | 23    | 6.56  |
|          | roun        |       |   |      |     |              | 21.1       |      |       |       |
|          | d 3         | 18    | 6 | 3    | 127 | 6            | 6          | 127  | 18    | 7.05  |
|          | roun        | 40    | _ | 0    | 400 | ^            | 14.2       | 400  | 40    | 7 4 4 |
|          | d 1<br>roun | 18    | 9 | 2    | 128 | 9            | 2          | 128  | 18    | 7.11  |
| P#8      | d 2         | 12    | 2 | 6    | 92  | 2            | 46         | 92   | 12    | 7.66  |
|          | roun        |       |   |      |     |              |            |      |       |       |
|          | d 3         | 13    | 2 | 6.5  | 81  | 2            | 40.5       | 81   | 13    | 6.23  |
|          | roun        | 20    | 1 | 0.0  | 044 | 1            | 04.4       | 044  | 20    | 7.50  |
|          | d 1<br>roun | 28    | 0 | 2.8  | 211 | 0            | 21.1       | 211  | 28    | 7.53  |
| P#9      | d 2         | 25    | 7 | 3.57 | 175 | 7            | 25         | 175  | 25    | 7     |
|          | roun        |       |   |      |     |              | 22.6       |      |       |       |
|          | d 3         | 18    | 6 | 3    | 136 | 6            | 6          | 136  | 18    | 7.55  |
|          | roun<br>d 1 | 29    | 2 | 1.38 | 193 | 2<br>1       | 9.19       | 193  | 29    | 6.65  |
| P#1      | roun        | 23    | 1 | 1.50 | 133 | <del>-</del> | 12.2       | 193  | 23    | 0.03  |
| 0        | d 2         | 26    | 4 | 1.85 | 172 | 4            | 8          | 172  | 26    | 6.61  |
|          | roun        |       | 1 |      |     | 1            |            |      |       |       |
|          | d 3         | 25    | 6 | 1.56 | 160 | 6            | 10         | 160  | 25    | 6.4   |
|          | roun        |       | 2 |      |     | 2            | 13.3       |      |       |       |
| D#4      | d 1         | 42    | 4 | 1.75 | 321 | 4            | 7          | 321  | 42    | 7.64  |
| P#1<br>1 | roun<br>d 2 | 49    | 2 | 2.33 | 361 | 2<br>1       | 17.1<br>9  | 361  | 49    | 7.36  |
| '        | roun        | 70    | 2 | 2.00 | 501 | 2            | 16.4       | 501  | 73    | 7.50  |
|          | d 3         | 49    | 0 | 2.45 | 329 | 0            | 5          | 329  | 49    | 6.71  |
|          | roun        |       | 1 |      |     | 1            |            |      |       |       |
|          | d 1         | 31    | 1 | 2.81 | 209 | 1            | 19         | 209  | 31    | 6.74  |

| P#1 | roun |    | 1 |      |     | 1 |      |     |    |      |
|-----|------|----|---|------|-----|---|------|-----|----|------|
| 2   | d 2  | 23 | 0 | 2.3  | 169 | 0 | 16.9 | 169 | 23 | 7.34 |
|     | roun |    |   |      |     |   | 17.6 |     |    |      |
|     | d 3  | 21 | 9 | 2.33 | 159 | 9 | 6    | 159 | 21 | 7.57 |
|     | roun |    | 1 |      |     | 1 |      |     |    |      |
|     | d 1  | 15 | 0 | 1.5  | 93  | 0 | 9.3  | 93  | 15 | 6.2  |
| P#1 | roun |    | 1 |      |     | 1 |      |     |    |      |
| 3   | d 2  | 21 | 5 | 1.4  | 129 | 5 | 8.6  | 129 | 21 | 6.14 |
|     | roun |    | 1 |      |     | 1 |      |     |    |      |
|     | d 3  | 25 | 7 | 1.47 | 145 | 7 | 8.52 | 145 | 25 | 5.8  |
|     | roun |    | 1 |      |     | 1 |      |     |    |      |
|     | d 1  | 22 | 0 | 2.2  | 123 | 0 | 12.3 | 123 | 22 | 5.59 |
| P#1 | roun |    |   |      |     |   | 12.2 |     |    |      |
| 4   | d 2  | 19 | 9 | 2.11 | 110 | 9 | 2    | 110 | 19 | 5.78 |
|     | roun |    |   |      |     |   | 21.8 |     |    |      |
|     | d 3  | 22 | 6 | 3.66 | 131 | 6 | 3    | 131 | 22 | 5.95 |

 $\label{eq:constraint} \textbf{Appendix O}$  Scores by participant (for all measures and units)

| Participant #1 | PARTICIPANT'S SCORES/SEGMENTS<br>BY ROUND |         |         |  |
|----------------|---|---------|---------|--|
| MEASURE        | ROUND 1                                   | ROUND 2 | ROUND 3 |  |
| S. R. UNPRUNED | 109.89                                    | 113.18  | 117     |  |
| S. R. PRUNED   | 102.94                                    | 110.45  | 115.5   |  |
| REPAIRS/C-UNIT | 0.3                                       | 0.25    | 0.08    |  |
| ERRORS/C-UNIT  | 0.84                                      | 1.25    | 1.25    |  |
| % ERROR-FREE   | 68.18                                     | 54.16   | 54.16   |  |
| CLAUSES/C-UNIT | 1.69                                      | 2       | 2       |  |
| WORDS/C-UNIT   | 12.53                                     | 13.5    | 12.83   |  |
| WORDS/CLAUSE   | 7.4                                       | 6.75    | 6.41    |  |
| SEGMENT        |   |         |         |  |
| TIME min.      | 1.35                                      | 1.28    | 1.2     |  |
| TIME sec.      | 95  | 88      | 80      |  |
| WORDS -        |   |         |         |  |
| UNPRUNED       | 174                                       | 166     | 156     |  |
| WORDS - PRUNED | 163                                       | 162     | 154     |  |
| CLAUSES        | 22  | 24      | 24      |  |
| C-UNITS        | 13  | 12      | 12      |  |
| ERRORS         | 11  | 15      | 15      |  |
| ERROR-FREE     |   |         |         |  |
| CLAUSES        | 15  | 13      | 13      |  |
| SELF-REPAIRS   | 4   | 3       | 1       |  |

| Participant #2 | PARTICIPANT'S SCORES/SEGMENTS<br>BY ROUND |         |         |
|----------------|---|---------|---------|
| MEASURE        | ROUND 1                                   | ROUND 2 | ROUND 3 |
| S. R. UNPRUNED | 134.85                                    | 131.4   | 133.93  |
| S. R. PRUNED   | 129.71                                    | 126     | 128.48  |
| REPAIRS/C-UNIT | 0.42                                      | 0.38    | 0.46    |
| ERRORS/C-UNIT  | 1.07                                      | 0.76    | 0.69    |
| % ERROR-FREE   | 67.64                                     | 71.87   | 70.96   |
| CLAUSES/C-UNIT | 2.42                                      | 2.46    | 2.38    |
| WORDS/C-UNIT   | 16.21                                     | 16.15   | 16.3    |

| WORDS/CLAUSE   | 6.67 | 6.56 | 6.83 |
|----------------|------|------|------|
| SEGMENT        |      |      |      |
| TIME min.      | 1.45 | 1.4  | 1.39 |
| TIME sec.      | 105  | 100  | 99   |
| WORDS -        |      |      |      |
| UNPRUNED       | 236  | 219  | 221  |
| WORDS - PRUNED | 227  | 210  | 212  |
| CLAUSES        | 34   | 32   | 31   |
| C-UNITS        | 14   | 13   | 13   |
| ERRORS         | 15   | 10   | 9    |
| ERROR-FREE     |      |      |      |
| CLAUSES        | 23   | 23   | 22   |
| SELF-REPAIRS   | 6    | 5    | 6    |

| Participant #3 | PARTICIPANT'S SCORES/SEGMENTS<br>BY ROUND |         |         |  |
|----------------|---|---------|---------|--|
| MEASURE        | ROUND 1                                   | ROUND 2 | ROUND 3 |  |
| S. R. UNPRUNED | 82.41                                     | 105.76  | 92,54   |  |
| S. R. PRUNED   | 76.48                                     | 98,64   | 86.44   |  |
| REPAIRS/C-UNIT | 1   | 1.2     | 1       |  |
| ERRORS/C-UNIT  | 1.85                                      | 2       | 1.83    |  |
| % ERROR-FREE   | 33.33                                     | 53.33   | 42.85   |  |
| CLAUSES/C-UNIT | 1.71                                      | 3       | 2.33    |  |
| WORDS/C-UNIT   | 16.57                                     | 19.4    | 14.16   |  |
| WORDS/CLAUSE   | 9.66                                      | 6.46    | 6.07    |  |
| SEGMENT        |   |         |         |  |
| TIME min.      | 1.31                                      | 0.59    | 0.59    |  |
| TIME sec.      | 91  | 59      | 59      |  |
| WORDS -        |   |         |         |  |
| UNPRUNED       | 125                                       | 104     | 91      |  |
| WORDS - PRUNED | 116                                       | 97      | 85      |  |
| CLAUSES        | 12  | 15      | 14      |  |
| C-UNITS        | 7   | 5       | 6       |  |
| ERRORS         | 13  | 10      | 11      |  |
| ERROR-FREE     |   |         |         |  |
| CLAUSES        | 4   | 8       | 6       |  |
| SELF-REPAIRS   | 7   | 6       | 6       |  |

| Participant #4 | PARTICIPANT'S SCORES/SEGMENTS<br>BY ROUND |         |         |  |  |
|----------------|---|---------|---------|--|--|
| MEASURE        | ROUND 1                                   | ROUND 2 | ROUND 3 |  |  |
| S. R. UNPRUNED | 111.42                                    | 123.15  | 123.15  |  |  |
| S. R. PRUNED   | 98.57                                     | 105.26  | 108.42  |  |  |
| REPAIRS/C-UNIT | 0.9                                       | 0.87    | 1.12    |  |  |
| ERRORS/C-UNIT  | 1.4                                       | 1.37    | 0.87    |  |  |
| % ERROR-FREE   | 35.29                                     | 50      | 46.15   |  |  |
| CLAUSES/C-UNIT | 1.7                                       | 1.5     | 1.62    |  |  |
| WORDS/C-UNIT   | 13.8                                      | 12.5    | 12.87   |  |  |
| WORDS/CLAUSE   | 8.11                                      | 8.33    | 7.92    |  |  |
| SEGMENT        |   |         |         |  |  |
| TIME min.      | 1.24                                      | 0.57    | 0.57    |  |  |
| TIME sec.      | 84  | 57      | 57      |  |  |
| WORDS -        |   |         |         |  |  |
| UNPRUNED       | 156                                       | 117     | 117     |  |  |
| WORDS - PRUNED | 138                                       | 100     | 103     |  |  |
| CLAUSES        | 17  | 12      | 13      |  |  |
| C-UNITS        | 10  | 8       | 8       |  |  |
| ERRORS         | 14  | 11      | 7       |  |  |
| ERROR-FREE     |   |         |         |  |  |
| CLAUSES        | 6   | 6       | 6       |  |  |
| SELF-REPAIRS   | 9   | 7       | 9       |  |  |

| Participant #5 | PARTICIPANT'S SCORES/SEGMENTS<br>BY ROUND |         |         |  |
|----------------|---|---------|---------|--|
| MEASURE        | ROUND 1                                   | ROUND 2 | ROUND 3 |  |
| S. R. UNPRUNED | 132.39                                    | 141.5   | 146.03  |  |
| S. R. PRUNED   | 121.48                                    | 126.79  | 135.28  |  |
| REPAIRS/C-UNIT | 1   | 0.81    | 0.68    |  |
| ERRORS/C-UNIT  | 1.21                                      | 1       | 0.56    |  |
| % ERROR-FREE   | 62.85                                     | 57.14   | 84.37   |  |
| CLAUSES/C-UNIT | 2.5                                       | 1.75    | 2       |  |
| WORDS/C-UNIT   | 17.5                                      | 14      | 14.93   |  |
| WORDS/CLAUSE   | 7   | 8       | 7.46    |  |
| SEGMENT        |   |         |         |  |
| TIME min.      | 2.01                                      | 1.46    | 1.46    |  |
| TIME sec.      | 121                                       | 106     | 106     |  |

| WORDS -        |     |     |     |
|----------------|-----|-----|-----|
| UNPRUNED       | 267 | 250 | 258 |
| WORDS - PRUNED | 245 | 224 | 239 |
| CLAUSES        | 35  | 28  | 32  |
| C-UNITS        | 14  | 16  | 16  |
| ERRORS         | 17  | 16  | 9   |
| ERROR-FREE     |     |     |     |
| CLAUSES        | 22  | 16  | 27  |
| SELF-REPAIRS   | 14  | 13  | 11  |

| Participant #6 | PARTICIPA | SEGMENTS |         |
|----------------|-----------|----------|---------|
| MEASURE        | ROUND 1   | ROUND 2  | ROUND 3 |
| S. R. UNPRUNED | 120.85    | 138.62   | 135.73  |
| S. R. PRUNED   | 116.57    | 131.37   | 132.78  |
| REPAIRS/C-UNIT | 0.37      | 0.37     | 0.12    |
| ERRORS/C-UNIT  | 0.25      | 0.25     | 0.5     |
| % ERROR-FREE   | 94.11     | 86.66    | 75      |
| CLAUSES/C-UNIT | 2.12      | 1.87     | 2       |
| WORDS/C-UNIT   | 17        | 15.87    | 16.87   |
| WORDS/CLAUSE   | 8         | 8.46     | 8.43    |
| SEGMENT        |           |          |         |
| TIME min.      | 1,10      | 0.58     | 1,01    |
| TIME sec.      | 70        | 58       | 61      |
| WORDS -        |           |          |         |
| UNPRUNED       | 141       | 134      | 138     |
| WORDS - PRUNED | 136       | 127      | 135     |
| CLAUSES        | 17        | 15       | 16      |
| C-UNITS        | 8         | 8        | 8       |
| ERRORS         | 2         | 2        | 4       |
| ERROR-FREE     |           |          |         |
| CLAUSES        | 16        | 13       | 12      |
| SELF-REPAIRS   | 3         | 3        | 1       |

| Participant #7 | PARTICIPANT'S SCORES/SEGMENTS<br>BY ROUND |       |        |  |
|----------------|---|-------|--------|--|
| MEASURE        | ROUND 1 ROUND 2 ROUND 3                   |       |        |  |
| S. R. UNPRUNED | 148                                       | 140.8 | 137.27 |  |

| S. R. PRUNED   | 117   | 120.8 | 115.45 |
|----------------|-------|-------|--------|
| REPAIRS/C-UNIT | 2.61  | 1.85  | 2      |
| ERRORS/C-UNIT  | 1     | 1     | 0.5    |
| % ERROR-FREE   | 68.57 | 69.56 | 83.33  |
| CLAUSES/C-UNIT | 2.69  | 3.28  | 3      |
| WORDS/C-UNIT   | 18    | 21.57 | 21.16  |
| WORDS/CLAUSE   | 6.68  | 6.56  | 7.05   |
| SEGMENT        |       |       |        |
| TIME min.      | 2     | 1.15  | 1.06   |
| TIME sec.      | 120   | 75    | 66     |
| WORDS -        |       |       |        |
| UNPRUNED       | 296   | 176   | 151    |
| WORDS - PRUNED | 234   | 151   | 127    |
| CLAUSES        | 35    | 23    | 18     |
| C-UNITS        | 13    | 7     | 6      |
| ERRORS         | 13    | 7     | 3      |
| ERROR-FREE     |       |       |        |
| CLAUSES        | 24    | 16    | 15     |
| SELF-REPAIRS   | 34    | 13    | 12     |

| Participant #8 | PARTICIPANT'S SCORES/SEGMENTS<br>BY ROUND |         |         |  |
|----------------|---|---------|---------|--|
| MEASURE        | ROUND 1                                   | ROUND 2 | ROUND 3 |  |
| S. R. UNPRUNED | 141.49                                    | 141.81  | 122.6   |  |
| S. R. PRUNED   | 114.62                                    | 125.45  | 105.65  |  |
| REPAIRS/C-UNIT | 1.22                                      | 3       | 2.5     |  |
| ERRORS/C-UNIT  | 0.66                                      | 3       | 0.5     |  |
| % ERROR-FREE   | 66.66                                     | 58.33   | 92.3    |  |
| CLAUSES/C-UNIT | 2   | 6       | 6.5     |  |
| WORDS/C-UNIT   | 14.22                                     | 46      | 40.5    |  |
| WORDS/CLAUSE   | 7.11                                      | 7.66    | 6.23    |  |
| SEGMENT        |   |         |         |  |
| TIME min.      | 1.07                                      | 0.44    | 0.46    |  |
| TIME sec.      | 67  | 44      | 46      |  |
| WORDS -        |   |         |         |  |
| UNPRUNED       | 158                                       | 104     | 94      |  |
| WORDS - PRUNED | 128                                       | 92      | 81      |  |
| CLAUSES        | 18  | 12      | 13      |  |

| C-UNITS      | 9  | 2 | 2  |
|--------------|----|---|----|
| ERRORS       | 6  | 6 | 1  |
| ERROR-FREE   |    |   |    |
| CLAUSES      | 12 | 7 | 12 |
| SELF-REPAIRS | 11 | 6 | 5  |

| Participant #9 | PARTICIPANT'S SCORES/SEGMENTS<br>BY ROUND |         |         |
|----------------|---|---------|---------|
| MEASURE        | ROUND 1                                   | ROUND 2 | ROUND 3 |
| S. R. UNPRUNED | 105.21                                    | 103     | 115.44  |
| S. R. PRUNED   | 91.73                                     | 92.92   | 103.29  |
| REPAIRS/C-UNIT | 1.9                                       | 2       | 1.16    |
| ERRORS/C-UNIT  | 1.3                                       | 1.42    | 1.33    |
| % ERROR-FREE   | 57.14                                     | 72      | 61.11   |
| CLAUSES/C-UNIT | 2.8                                       | 3.57    | 3       |
| WORDS/C-UNIT   | 21.1                                      | 25      | 22.66   |
| WORDS/CLAUSE   | 7.53                                      | 7       | 7.55    |
| SEGMENT        |   |         |         |
| TIME min.      | 2.18                                      | 1.53    | 1.19    |
| TIME sec.      | 138                                       | 113     | 79      |
| WORDS -        |   |         |         |
| UNPRUNED       | 242                                       | 194     | 152     |
| WORDS - PRUNED | 211                                       | 175     | 136     |
| CLAUSES        | 28  | 25      | 18      |
| C-UNITS        | 10  | 7       | 6       |
| ERRORS         | 13  | 10      | 8       |
| ERROR-FREE     |   |         |         |
| CLAUSES        | 16  | 18      | 11      |
| SELF-REPAIRS   | 19  | 14      | 7       |

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| Participant #10 | PARTICIPANT'S SCORES/SEGMENTS<br>BY ROUND |        |        |  |
|-----------------|---|--------|--------|--|
| MEASURE         | ROUND 1 ROUND 2 ROUND 3                   |        |        |  |
| S. R. UNPRUNED  | 109.65                                    | 112,87 | 117.95 |  |
| S. R. PRUNED    | 99.82                                     | 102.17 | 109.09 |  |
| REPAIRS/C-UNIT  | 0.38                                      | 0.64   | 0.37   |  |
| ERRORS/C-UNIT   | 0.23                                      | 0.35   | 0.43   |  |
| % ERROR-FREE    | 82.75                                     | 84.61  | 72     |  |

| CLAUSES/C-UNIT | 1.38 | 1.85  | 1.56 |
|----------------|------|-------|------|
| WORDS/C-UNIT   | 9.19 | 12.28 | 10   |
| WORDS/CLAUSE   | 6.65 | 6.61  | 6.4  |
| SEGMENT        |      |       |      |
| TIME min.      | 1.56 | 1.41  | 1.28 |
| TIME sec.      | 116  | 101   | 88   |
| WORDS -        |      |       |      |
| UNPRUNED       | 212  | 190   | 173  |
| WORDS - PRUNED | 193  | 172   | 160  |
| CLAUSES        | 29   | 26    | 25   |
| C-UNITS        | 21   | 14    | 16   |
| ERRORS         | 5    | 5     | 7    |
| ERROR-FREE     |      |       |      |
| CLAUSES        | 24   | 22    | 18   |
| SELF-REPAIRS   | 8    | 9     | 6    |

| Participant #11 | PARTICIPANT'S SCORES/SEGMENTS<br>BY ROUND |         |         |
|-----------------|---|---------|---------|
| MEASURE         | ROUND 1                                   | ROUND 2 | ROUND 3 |
| S. R. UNPRUNED  | 131.63                                    | 125.68  | 123.19  |
| S. R. PRUNED    | 116.72                                    | 114     | 116.8   |
| REPAIRS/C-UNIT  | 0.7                                       | 0.57    | 0.35    |
| ERRORS/C-UNIT   | 0.25                                      | 0.28    | 0.1     |
| % ERROR-FREE    | 85.71                                     | 87.75   | 95.91   |
| CLAUSES/C-UNIT  | 1.75                                      | 2.33    | 2.45    |
| WORDS/C-UNIT    | 13.37                                     | 17.19   | 16.45   |
| WORDS/CLAUSE    | 7.64                                      | 7.36    | 6.71    |
| SEGMENT         |   |         |         |
| TIME min.       | 2.45                                      | 3.1     | 2.49    |
| TIME sec.       | 165                                       | 190     | 169     |
| WORDS -         |   |         |         |
| UNPRUNED        | 362                                       | 398     | 347     |
| WORDS - PRUNED  | 321                                       | 361     | 329     |
| CLAUSES         | 42  | 49      | 49      |
| C-UNITS         | 24  | 21      | 20      |
| ERRORS          | 6   | 6       | 2       |
| ERROR-FREE      |   |         |         |
| CLAUSES         | 36  | 43      | 47      |

| Participant #12 | PARTICIPANT'S SCORES/SEGMENTS<br>BY ROUND |         |         |
|-----------------|---|---------|---------|
| MEASURE         | ROUND 1                                   | ROUND 2 | ROUND 3 |
| S. R. UNPRUNED  | 113.85                                    | 105.27  | 98.01   |
| S. R. PRUNED    | 98.74                                     | 92.18   | 94.45   |
| REPAIRS/C-UNIT  | 1.27                                      | 0.8     | 0.66    |
| ERRORS/C-UNIT   | 1   | 1       | 0.77    |
| % ERROR-FREE    | 80.64                                     | 65.21   | 66.66   |
| CLAUSES/C-UNIT  | 2.81                                      | 2.3     | 2.33    |
| WORDS/C-UNIT    | 19  | 16.9    | 17.66   |
| WORDS/CLAUSE    | 6.74                                      | 7.34    | 7.57    |
| SEGMENT         |   |         |         |
| TIME min.       | 2.07                                      | 1.5     | 1.41    |
| TIME sec.       | 127                                       | 110     | 101     |
| WORDS -         |   |         |         |
| UNPRUNED        | 241                                       | 193     | 165     |
| WORDS - PRUNED  | 209                                       | 169     | 159     |
| CLAUSES         | 31  | 23      | 21      |
| C-UNITS         | 11  | 10      | 9       |
| ERRORS          | 11  | 10      | 7       |
| ERROR-FREE      |   |         |         |
| CLAUSES         | 25  | 15      | 14      |
| SELF-REPAIRS    | 14  | 8       | 6       |

| Participant #13 | PARTICIPANT'S SCORES/SEGMENTS<br>BY ROUND |        |        |
|-----------------|---|--------|--------|
| MEASURE         | ROUND 1 ROUND 2 ROUND 3                   |        |        |
| S. R. UNPRUNED  | 95.67                                     | 110.34 | 111.15 |
| S. R. PRUNED    | 75.4                                      | 88.96  | 91.57  |
| REPAIRS/C-UNIT  | 1.3                                       | 1      | 0.76   |
| ERRORS/C-UNIT   | 0.5                                       | 0.53   | 0.41   |
| % ERROR-FREE    | 66.66                                     | 66.66  | 72     |
| CLAUSES/C-UNIT  | 1.5                                       | 1.4    | 1.47   |
| WORDS/C-UNIT    | 9.3                                       | 8.6    | 8.52   |
| WORDS/CLAUSE    | 6.2                                       | 6.14   | 5.8    |
| SEGMENT         |   |        |        |

| TIME min.      | 1.14 | 1.27 | 1.35 |
|----------------|------|------|------|
| TIME sec.      | 74   | 87   | 95   |
| WORDS -        |      |      |      |
| UNPRUNED       | 118  | 160  | 176  |
| WORDS - PRUNED | 93   | 129  | 145  |
| CLAUSES        | 15   | 21   | 25   |
| C-UNITS        | 10   | 15   | 17   |
| ERRORS         | 5    | 8    | 7    |
| ERROR-FREE     |      |      |      |
| CLAUSES        | 10   | 14   | 18   |
| SELF-REPAIRS   | 13   | 15   | 13   |

| Participant #14 | PARTICIPANT'S SCORES/SEGMENTS<br>BY ROUND |         |         |
|-----------------|---|---------|---------|
| MEASURE         | ROUND 1                                   | ROUND 2 | ROUND 3 |
| S. R. UNPRUNED  | 110.43                                    | 94.16   | 125.62  |
| S. R. PRUNED    | 106.95                                    | 91.66   | 122.81  |
| REPAIRS/C-UNIT  | 0.3                                       | 0.33    | 0.33    |
| ERRORS/C-UNIT   | 0.2                                       | 0.22    | 0       |
| % ERROR-FREE    | 90.9                                      | 89.47   | 100     |
| CLAUSES/C-UNIT  | 2.2                                       | 2.11    | 3.66    |
| WORDS/C-UNIT    | 12.3                                      | 12.22   | 21.83   |
| WORDS/CLAUSE    | 5.59                                      | 5.78    | 5.95    |
| SEGMENT         |   |         |         |
| TIME min.       | 1.09                                      | 1.12    | 1.04    |
| TIME sec.       | 69  | 72      | 64      |
| WORDS -         |   |         |         |
| UNPRUNED        | 127                                       | 113     | 134     |
| WORDS - PRUNED  | 123                                       | 110     | 131     |
| CLAUSES         | 22  | 19      | 22      |
| C-UNITS         | 10  | 9       | 6       |
| ERRORS          | 2   | 2       | 0       |
| ERROR-FREE      |   |         |         |
| CLAUSES         | 20  | 17      | 22      |
| SELF-REPAIRS    | 3   | 3       | 2       |