RECONTEXTUALIZATION OF INTERDISCIPLINARITY DISCOURSES IN EFL CURRICULAR DIRECTIVES AND READING ACTIVITIES

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Abstract: Recently, interdisciplinarity seems especially significant in view of its potential power in forwarding connections between English as a Foreign Language (EFL) and other disciplines. We examine how this concept is recontextualized in science popularization process in the Curricular Directives (CD) for linguistic education. Based on this, we propose and discuss EFL teaching activities taking into account the discourse on interdisciplinarity in the Applied Linguistics literature and in the CD. The results show that, gradually, the concept has been considered more important, as the number of occurrences demonstrated. Teaching activities that combine different disciplines have potential for encouraging students to participate in social practices.
Keywords: Applied Linguistics; Curricular Directives; EFL teaching activities; Interdisciplinarity; Science popularization.

Resumo: Recentemente, interdisciplinaridade parece especialmente significativa em vista de seu potencial poder no encaminhamento de conexões entre Inglês como Língua Estrangeira (ILE) e outras disciplinas. Nós verificamos como este conceito é recontextualizado no processo de popularização da ciência nas Diretrizes Curriculares (DC) para a educação linguística. Com base nisso, propomos e discutimos atividades de ensino de ILE levando em consideração o discurso sobre interdisciplinaridade na literatura da Línguística Aplicada e nas DC. Os resultados

mostram que, gradualmente, o conceito tem sido considerado mais importante, como o número de ocorrências demonstrou. Atividades de ensino que combinam diferentes disciplinas tem potencial para encorajar os alunos a participarem em práticas sociais.

Palavras-chave: Atividades de ensino de ILE; Diretrizes Curriculares; Interdisciplinaridade; Linguística Aplicada; Popularização da ciência.

1. Introduction

Within a myriad of common issues discussed in documents elaborated by the national government such as *Parâmetros Curriculares Nacionais* (PCNs) (BRASIL, 2000) and *Orientações Curriculares Nacionais* (OCNs) (BRASIL, 2006) and the state government such as *Lições do Rio Grande* (LRG) (RIO GRANDE DO SUL, 2009), interdisciplinarity seems especially significant in view of its potential power in foraging connections between EFL and other areas of the curriculum. A statement in the PCNs, specifically, calls attention to it:

> é essencial, pois, entender-se a presença das LE Modernas inseridas numa área, e não mais como disciplina isolada no currículo [...] estabelecer, de maneira clara, *vários tipos de relações entre as LE e as demais disciplinas que integram a área* (BRASIL, 2000, p. 26).

This statement seems especially relevant for EFL teaching and learning. Firstly, because it alludes to EFL as a curriculum discipline. Secondly, because it refers to the possible interdisciplinary relations between EFL and other areas of the curriculum.

In Applied Linguistics (AL) – an interdisciplinary area by definition (MOITA-LOPES, 2006, p. 97; LIDDICOAT, 2010, p. 07) – studies on interdisciplinarity have been developed, although, in a timid way (MOITA-LOPES,

2006, p. 97). According to Leffa (2006), interdisciplinarity is important, because

> há um ganho de conhecimento quando consigo unir em vez de separar. Durante muitos séculos celebrou-se a ideia de pureza; hoje estamos descobrindo que para evoluir precisamos ser híbridos; o que é puro e não se mistura acaba definhando (p. 23).

This statement speaks to Moita-Lopes'desire for changing the area of AL, in the sense of encouraging interdisciplinary studies "[para] nos ajudar a compreender a complexidade das questões que nos confrontam no cotidiano" (2006, p. 98). In order to study how interdisciplinarity can be approached in the area of EFL, the concept of science popularization (SP) seems relevant, considering that the school functions as a recontextualizing field of science. School teaching and learning involves the consumption of texts that bring science closer to a non specialized audience formed by students and teachers.

Thus, SP can be defined as a process in which texts and discourses are taken from their primary scientific context (including laboratories and scientific journals) and recontextualized in a secondary non specialized context (including schools) (MOTTA-ROTH, 2009, p. 135). Just as scientific discourse is recontextualized through genres in newspapers, TV shows and magazines, Curriculum Directives (CD) for linguistic education also promote recontextualization by offering school community access to information about recent scientific discoveries from different areas, such as linguistic area. In primary education, SP genres, such as the CD analyzed in this paper, are expected to help non specialized readers have access to and incorporate scientific knowledge and debates in their pedagogic practices (verbal information).

Against the backdrop of this discussion on interdisciplinarity in the AL literature, our main purpose, in this paper, is to examine how the concept of interdisciplinarity is recontextualized in the CD associated with EFL teaching and learning. In addition, based on this theoretical survey, we propose and discuss EFL teaching activities – which we have elaborated in collaboration with members of the research group GRPesq/CNPq "Linguagem como Prática Social" – taking into account the discourse on interdisciplinarity in the AL literature and the official documents of CD. This study is part of the umbrella project entitled *Análise crítica de gêneros discursivos em práticas sociais de popularização da ciência*, developed by the *Laboratório de Pesquisa e Ensino de Leitura e Redação* (LABLER), that aims at investigating how the process of SP is constituted in discursive genres as situated social practices (MOTTA-ROTH, 2011, p. 2).

The paper is organized in four main sections. Firstly, the literature review onthe concept of interdisciplinarity in AL is presented. Secondly, the methodology explains the analitical procedures.The results subdivided in two moments – one related to the CD and the other related to the proposed activities – are discussed. Finally, some considerations about the concept in EFL teaching activities are highlighted.

2. Literature Review

The concept of interdisciplinarity has changed over time. Klein (2005) states that the emergence of interdisciplinarity is linked to "the rise of modernity [and] it is conventionally associated with the ascendency of science and technology […] the study of languages and works, and the growing autonomy of disciplines" (p. 19).

According to Klein and Newell (1997 apud NEWELL, 2001, p. 13), interdisciplinary studies may be defined as "a process of answering a question, solving a problem, or addressing a topic that is too broad or complex

to be dealt with adequately by a single discipline or profession". An interdisciplinary study "draws insights from relevant disciplines and integrates those insights into a more comprehensive understanding" (NEWELL, 2001, p. 2).

These proposals for interdisciplinary studies are in accordance with Leffa's opinion about working each discipline individually. According to the author, a single discipline can be compared with a feud

> separado dos outros por muros quase intransponíveis, erguidos para abrigar e proteger seus vassalos da invasão dos outros feudos, de modo que qualquer conhecimento produzido fica retido dentro dos muros de proteção (2006, p. 15).

Then, an interdisciplinary teaching proposal becomes relevant, because, according to Leffa, there is a knowledge production when one can unite disciplines rather than separate them (2006, p. 23). In order to qualify education, in this case EFL teaching and learning, teachers and researchers have turned their attention to interdisciplinary studies, because interdisciplinarity may accomplish a range of objectives, as proposed by Klein (1990, p. 11), such as: a) to answer complex questions; b) to address broad issues; c) to explore disciplinary and professional relations; d) to solve problems that are beyond the scope of any one discipline; and e) to achieve unity of knowledge, whether on a limited or grand scale. These objectives may help linguistic education, considering that students should have interconnected knowledge from different areas in order to make a critical reading of the world (ROSSI, 2012, p. 42).

In relation to interdisciplinarity, it is important to mention that, in AL literature, this concept is termed differently by lexicogrammatical choices such as multidisciplinarity, transdisciplinarity, etc. According to Klein, these terms "constitute a core vocabulary for understanding both the genus of *Interdisciplinarity* and individual species within the general classification"

(2010, p. 1). In this paper, we search for both terms in order to find clues that can show passages related to the concept of interdisciplinarity.

3. Methodology

The analysis was divided into three main moments. Firstly we searched for the following terms in the PCNs, OCNs and LRG: "Discipline", "Disciplinary" and "Disciplinarity". Our main goal was to find passages associated to the concept of interdisciplinarity, (in which commonly related terms would appear those quoted in the Literature Review section.)

Secondly, we also searched for *explicit lexemes*, which are words that explicitly signal the content and function of a passage in a text by providing 'explicit lexical clues' which suggest stages of text development (MOTTA-ROTH, 1995 based on NWOGU, 1990, p. 129). Finally, the analysis.

We have also analyzed the passages related to interdisciplinarity, considering the discussion we developed in the Literature Review section about CD as an SP genre and as an instance of recontextualization of scientific discourse. Finally, against the background of the review of the literature and the analysis of the CD, we proposed and discussed the recontextualization of discourses on interdisciplinarity in the EFL teaching activities devised by us. These activities were proposed as a response to the lack of discussion and clarity in the CD and literature on interdisciplinarity. In addition, the activities attempt to recontextualize and articulate EFL and Biology discourses, in order to integrate different insights into a more comprehensive understanding of the world.

The rationale for our choice is the fact that the general audience for the activity is the students in the twelfth grade who will frequently enter the Universidade Federal de Santa Maria (UFSM) by taking the Vestibular exam at the end of their senior year, considering that in recent years UFSM has explicitly adopted an interdisciplinary approach to this examination process.

These specific activities proposed here, however, have not yet been developed in the classroom. Only used in my traineeship and courses for academic students offered by LABLER project.

The activities were developed based on an SP news text entitled *Gene 'controls body fat levels'*, retrieved from the *corpus* of the umbrella project, collected from the *BBC News Online* website[2].

4. Results and Discussion

The analysis evidences a few aspects of interdisciplinarity: 4.1) in the CD, the data show that the concept has gradually gained more importance through time; and 4.2) the activities show that EFL when combined with different disciplines has potential for encouraging students to participate in social practices (SCHLATTER; GARCEZ, 2012, p. 109).

4.1 Interdisciplinarity in the CD

The number of occurrences of the term *interdisciplinarity* and its related terms in the official documents of CD is indicated in Table 1. Considering that we searched for *discipline*, *disciplinary* and *disciplinarity* in order to find passages associated to the concept of interdisciplinarity, in which commonly related terms would appear such as *interdisciplinarity*, *multidisciplinarity*, *transdisciplinarity*, etc., as mentioned in the Literature Review section, we found 362 occurrences. In these occurrences, the most frequent term was *interdisciplinary* and *interdisciplinarity* with 59 occurrences the pair.

However, we focused on the FL portions of "Language, Codes and their Technologies" of the official documents, in which we found 13 passages referring to interdisciplinarity.

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2. *BBC News Online* website: http://news.bbc.co.uk/2/hi/health/6977423.stm

Table 1 - Frequency of occurrence of interdisciplinarity and its related terms in the corpus

Document / N. of occurrences	PCNs (2000)	OCNs (2006)	LRG (2009)	Total
Disciplina, disciplinar and *disciplinaridade*	60	127	175	**362**
Interdisciplinar and *interdisciplinaridade*	7	19	33	**59**
Multidisciplinar and *multidisciplinaridade*	0	2	1	3
Pluridisciplinar and *pluridisciplinaridade*	0	0	0	0
Transdisciplinar and *transdisciplinaridade*	5	5	2	12

If we consider the identifying mode, in which one entity is being used to identify another: 'x is identified by a', or 'a serves to define the identity of x' (HALLIDAY; MATTHIESSEN, 2004, p. 227), then the data show that, in general, there is no explicit definition of interdisciplinarity in the documents.

Nevertheless, the data indicate that the texts bear some relation to the perspective on interdisciplinarity proposed by Klein (1990) and Newell (2001), which emphasizes the connection between different disciplines in that each one has its own contribution for answering a question, solving a problem or addressing a complex topic, as Examples 1 and 2 demonstrate:

Example 1

> Outro ponto a ser considerado diz respeito à forma pela qual as *diferentes disciplinas da grade curricular podem e devem interligar-se* [...] Se no livro didático utilizado figura a *frase*, na língua estrangeira objeto de estudo, "Onde é a estação de trens?", além de chamar a atenção para a adequada construção gramatical do enunciado, será necessário atentar para o *contexto* onde tal frase poderia ser produzida e para as razões que confeririam importância ao fato de que o aluno seja capaz de produzi-la e entendê-la (BRASIL, 2000, p. 29).

Example 2

> [...] num contexto de formação ampla como o do ensino médio, *uma disciplina não se fecha nela mesma*, e que é preciso contemplar o todo dessa formação que se pretende oferecer aos nossos estudantes, dentro do qual uma *disciplina deve interagir com todas as demais para que se obtenham resultados de maior alcance na constituição da cidadania* (BRASIL, 2006, p. 130).

The explicit lexemes "*diferentes disciplinas* da grade curricular *podem e devem interligar-se*" and "*disciplina* deve *interagir* com *todas as demais* para que se obtenham *resultados de maior alcance* na constituição da cidadania" indicate that a problem is "too broad or complex to be dealt with adequately by a single discipline" (KLEIN; NEWELL, 1997 apud NEWELL, 2001, p. 13). In this sense, interdisciplinarity becomes relevant, because it "draws insights from relevant disciplines and integrates those insights into a more comprehensive understanding" (NEWELL, 2001, p. 2).

Example 3 corroborates the concept proposed by Klein and Newell (1997), in the sense that disciplines belonging to different areas should be connected, as demonstrated by "em vez de ensinar as matérias escolares de *maneira isolada*, ou seja, *voltadas para si mesmas*:

Example 3

[…] nos programas pedagógicos são reforçadas as propostas de *interdisciplinaridade*, *transdisciplinaridade*, transversalidade. O intuito delas é *promover a expansão da compreensão de mundo*, pois pretendem ensinar os alunos a *entender as relações entre as disciplinas* pedagógicas – *em vez de ensinar as matérias escolares de maneira isolada, ou seja, voltadas para si mesmas* (BRASIL, 2006, p. 94).

In addition, Example 3 confirms Leffa's view (2006) that an isolated work with disciplines is insufficient, in the sense that "[o] conhecimento produzido fica retido dentro dos muros de proteção" (p. 15). In relation to Examples 1, 2 and 3, they also indicate another important question which is presented by the explicit lexemes *integrar-se*, *não se fecha nela mesma*, *maior alcance* and *relações* in opposition to *isolada* and *voltadas para si mesmas*. The first explicit lexemes seem in accordance with the concept of interdisciplinarity, in the sense that interdisciplinarity is a modern concept that concerns the "movement across disciplinary boundaries" (KLEIN, 1990, p. 19), while the latter seem to reference the disciplines when these are compared with a feud "separado dos outros por muros quase intransponíveis" (LEFFA, 2006, p. 15), that can be related to a more traditional view on teaching and learning.

Another interpretation from the Example 1 is the relation between *frase* and disciplinarity versus *context* and interdisciplinarity. In the example, *frase* refers to the grammatical construction, an element of the language

which becomes insufficient for EFL teaching and learning, if we consider the broad system of the language which contains phonological, morphological, lexical, syntactic, semantic, pragmatic, textual and discursive elements. In opposition, *context* refers to interdisciplinarity, because it goes beyond a single linguistic element.

Examples 4 and 5 contribute to the development of awareness about the relation between various disciplines, the social context and comprehension of the world. They are more related to the school context than Examples 1, 2 and 3, since they suggest real alternatives such as pedagogical projects and activities that can be developed by different groups to explore interdisciplinary work. *Pedagogia de projetos* and *buscar informações sobre um tema em pauta em outra disciplina* are suggestions from LRG (2009).

Example 4

Trabalho *interdisciplinar*: considerando que o conhecimento é complexo e a *separação de disciplinas tem um objetivo didático de detalhamento e aprofundamento*, não se pode perder de vista a *relação dos conteúdos trabalhados com as demais disciplinas*, dentro da própria área e entre as áreas. *Uma alternativa interessante de se trabalhar a interdisciplinaridade é através da pedagogia de projetos*, possibilitando despertar no aluno as habilidades de estabelecer conexões entre as informações, interligar conteúdos, usar o senso crítico, por meio de *propostas flexíveis* e ligadas à *realidade do grupo* (RIO GRANDE DO SUL, 2009, p. 47).

Example5

> Não se trata de aprender recursos linguísticos para usá-los talvez um dia, mas sim de *fazer coisas* (conhecer os colegas, *buscar informações sobre um tema em pauta em outra disciplina* [...] lançando mão de recursos linguísticos nas línguas adicionais, e também na língua portuguesa (RIO GRANDE DO SUL, 2009, p. 140).

The presence of these suggestions can also be understood as an innovative point in LRG in opposition to PCNs and OCNs. LRG brings a *progressão curricular* (curricular progression), which connects different disciplines to the FL in thematic axs, discursive genres and projects.

In general terms, explicit lexemes such as *integrar-se*, *não se fecha nela mesma*, *maior alcance*, *relações*, *colaboração* and *focalizada no novo*, which are part of the curricular proposal, indicate that the CD discourse adopts the concept of interdisciplinarity and denies the disciplinarity, because it expands the view of a content, topic or issue.

Similarly to changes that the concept of interdisciplinarity suffered over time, the way that the CD approach the concept has also changed. The data show that LRG as the most recent document, in contrast to PCNs and OCNs, seems more engaged in working disciplines in connection. This can be proved based on the reference to projects, work with thematic axes, discursive genres and curricular progression. PCNs and OCNs only mention the "relation between the disciplines" without connecting it to concrete activities. In the following section we present our view on how the concept of interdisciplinarity can be mobilized in EFL teaching activities.

4.2 Interdisciplinarity in EFL teaching activities

In order to instantiate, in the pedagogical practice, the concept of interdisciplinarity presented so far, we elaborated EFL teaching activities in connection with Biology. The activities are an attempt to explore the concept of interdisciplinarity.

These activities focus on reading teaching and learning, which is commonly organized in three main moments (MOTTA-ROTH, 2008, p. 245 based on WALLACE, 1992): pre-reading, reading and post-reading.

4.2.1 Pre-reading

Previous knowledge activation, such as the construction of semantic maps and the location of the text in the repertoire of discursive genres are part of this preparatory moment for the reading task. At this stage, hypotheses are raised about the characteristics of the context (the social function of the text) and text (rhetorical structure and lexical-grammatical elements) (MOTTA-ROTH, 2008, p. 251-254).

Example 6

> Rush, stress and lack of time. How often have you heard complains about that? And you, how many times have you also felt the consequences of your own hectic life? The media often emphasizes the importance of basic care with the body which can make all the difference in your health and well-being. Programs in national television such as Bem Estar (Globo) offers tips on how to have a healthy lifestyle, avoiding smoking, heavy drinking, and adopting good sleeping and eating habits, etc..

> Based on this reflection, discuss in class the following questions: What does "healthy" mean to you? Do you worry about your health?
>
> To what extent are you healthy? Do you have a healthy diet? Do you exercise? Do you sleep well?

Example 6 explores the theme of *health* and the general problematizations *care with the body*, *well-being* and *healthy lifestyle* are presented. These italicized words function as explicit lexemes which refer to the area of Biology. The thematic choice is related to that curricular progression for twelfth grade proposed by LRG. In this case, the activities mobilize EFL and Biology knowledge in the same interdisciplinary activity.

The role of the EFL discipline in choosing the SP news text genre is related to: a) the focus on promoting the use of language in significant actions for the students (SCHLATTER; GARCEZ, 2012, p. 36); and b) the opportunity for the students to be in contact with different issues such as health, environment, ethics, etc. (COLUSSI, 2002, p. 15 apud SOCO-LOSKI, 2011, p. 13). In the case of the SP news text entitled *Gene 'controls body fat levels',* the gene, a part of DNA or RNA that contains chemical information needed to make a particular protein controlling or influencing an inherited bodily trait (MERRIAM-WEBSTER'S DICTIONARY AND THESAURUS, 2006, p. 451), is a content related to health that is usually studied in Biology courses.

Considering that the text is written in English, previous knowledge about the theme and the general problematization can help students discuss practices which are familiar to them, that is, health issues known to them through the media or even those that they witness at home. In this kind of activity, students can share their experiences, so one's experience can

help/influence other people's opinions. Considering the pre-reading as the stage of making hypothesis, the students might notice the intertextuality presented by two types of discourses: the science and the media, which are characteristic of the genre and are linked to the emergence of inter-disciplinarity (KLEIN, 2005, p. 19).

4.2.2 Reading

The reading activity per se is characterized by identification of key expressions in the text, recognition of meanings produced by different lexical-grammatical elements, establishment of semantic field and lexical networks, recognition of structural/functional stages. At this stage, students deconstruct the exemplar of the genre, analyzing "what is said, how it is said, by whom it is said, and why it is said" (MOTTA-ROTH, 2008, p. 254-261):

Example 7

Besides *direct speech*, there is another strategy to present someone's discourse in SP news: *indirect speech* (as shown in the following examples). We can observe that these discourses in terms of degrees of commitment from the journalist to the research that was reported in the SP news. Look at the examples below:

Weaker

a) Their work suggested that the gene acts as a high-level master switch that tells the body whether to accumulate or burn fat.

b) Dr Graff said this increased the potential to manipulate its effect to treat obesity.

c) Dr David Haslam, clinical director of the National Obesity Forum, warned that it could take many years to develop genetic treatments for obesity.

d) In the meantime, he said, the only way to tackle the problem effectively was to encourage people to eat healthily and take exercise.

Stronger

In SP news in English, *specific linguistic resources* such as the processes in *suggested*, *said* and *warned* are used to indicate evaluation about the content of the text, in this case, the recontextualization of a scientific research. This evaluation can indicate:

1) The author's agreement and disagreement with the research (concepts, methodos, results, conclusions, etc.);

1) Considering the explanation above, answer the following questions:

a. What speech acts (to question, to reveal, to declare, etc.) are performed by the author's voice through verbal processes?

2) Which different meanings do they produce? In order to answer this question, consider, for example, the process "to suggest" in comparison to "to demonstrate", exemplified above.

In Example 7, the activity explores the intertextuality present in the SP news text genre. In this genre, intertextuality usually refers to different voices evoked by the journalist in order to describe, interpret, explain, and/or evaluate the results of the research or invention that is being popularized to a non specialized audience (MOTTA-ROTH et al. 2008 apud SCHERER 2010, p. 30). In this case, the journalist evokes scientists' voices, such as *Dr Graff*'s and *Dr David Haslam's,* to explain and evaluate the research about the effect of a gene on people's health. It relates to intertextuality, in the sense that a topic can be discussed or a problem can be resolved (KLEIN; NEWELL, 1997 apud NEWELL, 2001, p. 13) through different points of view. In addition, in SP news, intertextuality gives credibility to the journalist's report of the scientific research, as specialists' opinions about the value of the new discovery are heard (NASCIMENTO, 2011).

Similarly to reported speech (direct and indirect), another linguistic resource used to confer credibility and legitimacy in the SP news texts is modalization (MOTTA-ROTH; MARCUZZO, 2010; LOVATO, 2010; MOTTA-ROTH; ROSSI, 2012). In the activity, modalization indicates evaluation in relation to the content presented in the text, through the verbal processes *suggested*, *said* and *warned*. When journalists bring an evaluation about the methodology and results of a research reported in the SP news texts, they usually indicate to the readers the degree of credibility/probability presented in the reported information (NASCIMENTO, 2011, p. 71). In addition, journalists tend to evoke the colleague researcher's voice (*Dr David Haslam's*) in order to simulate discussions that occur in the academic context (NASCIMENTO, 2011, p. 72). *Some language resources* indicate that there is more than one element of language being mobilized in the activity.

4.2.3 Post-Reading

The post-reading activity consists of a reflexive process about the connections between the text and its conditions of production and consumption. This stage aims to make students plan, analyze or produce a new exemplar of the genre (MOTTA-ROTH, 2008, p. 262-264). Considering the SP news genre, the post-reading is the stage in which the student is asked to reflect on and to evaluate the study results (SOCOLOSKI, 2011, p. 88-89).

Example 8

> *Reflect* on what you read, *learned* and developed throughout the activities about SP news genre, then, answer the question:
>
> a) As you noticed, the presence of different voices/discourse is a characteristic of the SP news genre. Consider your role as a citizen, how would you evaluate the results of the research reported in this SP news?
>
> b) If you were a doctor, what advice would you give to an obese patient?

Example 8 is aimed at positioning the students in different domains of the scientific practice: as reader/public that should be aware of the scientific developments and their effects on society and as researcher/doctor, that is, as active agents in the scientific process, who must consider the effects of their practices on people's lives. The activity may encourage students to position themselves in a place that is not part of their regular social practices, which would challenge them to act in the world in a critical way, assuming a new identity. This identity might be related to the concept of interdisciplinarity as well as to the concept of newness, as signaled by

the explicit lexeme *learned*, in the sense that both can mean "new": new identity and new knowledge that students are learning through reading.

These activities are only few examples among many possibilities for exploring the concept of interdisciplinarity linking EFL and other disciplines. Teaching activities that combine different disciplines have potential for encouraging students to participate in social practices, S (SCHLATTER; GARCEZ, 2012, p. 109; TÍLIO, 2012, p. 3).

5. Final Considerations

In this paper, the concept of interdisciplinarity was explored in association with EFL teaching and learning., We presented the analysis of the CD in order to understand how this concept has been incorporated in our area. The data showed that, gradually, the concept has gained more importance over time, as the growing number of occurrences demonstrated when LRG, OCNs and PCNs were analyzed. In addition, LRG, as the most recent CD, seems more engaged in working disciplines in connection.

Against the background of the AL literature and the CD analysis, we also proposed EFL teaching activities which considered the concept of interdisciplinarity with its main characteristics. Evidently, the adoption of an interdisciplinary approach to EFL teaching is not an easy step. In general,

a proposta de organização de um currículo interdisciplinar e de planos de estudos com base em projetos pedagógicos pode demandar várias mudanças em contextos escolares tradicionalmente organizados por disciplinas e por listas rígidas de conteúdos a serem cumpridos (SCHLATTER; GARCEZ, 2012, p. 91).

The EFL teaching activities in connection to Biology (or many other disciplines that could also be integrated such as Portuguese, Chemistry, Physical Education, etc.) were an attempt to demonstrate that teaching and learning are more effective when a discipline is connected to another

one rather than separate from it (LEFFA, 2006, p. 23). In the contemporary world, science and technology have produced a lot of questions and problems, which only can be answered and resolved effectively when we consider knowledge areas in connection.

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