

# When Learners Produce Specialized L2 Texts: Specialized Lexicography between Communication and Knowledge

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## Abstract

This article discusses the theoretical distinction between communicative- and cognitive-oriented dictionary use situations and explores whether or not this sharp distinction is still valid at a time when users do not use dictionaries but instead online language resources, particularly in learning environments. The paper seeks to answer this research question based on empirical data from a user study conducted at Copenhagen Business School in 2017. We carried out a controlled experiment involving ten test persons and the user study produced ten screen recordings, ten specialized texts, ten self-assessments and ten teacher-assessed rubrics. On the basis of our empirical data we found that the sharp distinction between communicative and cognitive-oriented dictionary use situations does not seem to make much sense anymore when users, to an increasing extent, do not use dictionaries but instead online language resources. We found that specialized language and specialized knowledge are completely intertwined, mutually interdependent and form a dialectic relation, which in fact can be identified by analyzing the test person's information search and retrieval processes. We also found that new, modern language resources make it possible to make searches in text directly and to take full advantage of the dialectic relation between specialized language and specialized knowledge.

**Keywords:** specialized lexicography, cognitive functions, communicative functions, situation distinction, learning situations, functional interdependence

## 1 Introduction

In this paper, we will reflect upon the results of a user study we have recently conducted within the field of specialized lexicography. (Leroyer & Simonsen 2017). We have compared user behavior during L2 text production processes with assistance from online multilingual language resources on the one hand, and the corresponding text production behavior with assistance from specialized dictionaries specifically designed for the purpose of specialized text production on the other hand, cf. also Nesi (2013) and Lew (2016). Online multilingual language resources here include L1 and L2 texts (in this case company websites, LinkedIn pages, etc.) as well as assistance from Google Translate for L1>L2 translation (when students use the system to translate small text segments from L1 to L2, or simply to find or check equivalents), see also Table 1 in Section 5 for an overview of the resources and their use.

The comparison of user behavior is largely based on a metalexigraphic theory, which has had a great impact for the past 25 years, not only in the Scandinavian countries, where it was devised, but also in many other places in the world.

The theory is known as the function theory (Bergenholtz & Pedersen 2017; Tarp 2009; Fuertes Olivera & Tarp 2014) and is based on an axiomatic distinction between communicative and cognitive-oriented dictionary use situations depending on whether the user needs communicative assistance to write an L2 text, or whether the user needs knowledge of the specialized language itself or of the subject field as support for the L2 text production.

The sharp distinction between communicative and cognitive-oriented dictionary use situations (Bergenholtz & Pedersen 2017) originated in a didactic reflection upon teaching specialized language and communication, and it was a logical approach in connection with the functional design of specialized dictionaries, and particularly the selection and presentation of the relevant lexicographic data.

However, it is difficult to acknowledge this distinction in situations where users do not use dictionaries, but make use of online language resources to assist their specialized L2 text production processes. Based on the findings of our study, it seems that this behavior tends to blur and even annihilate the communicative vs. cognitive distinction, as both seem to be interdependent and dynamically embedded in each other.

## 2 Research Questions

The underlying research questions of this paper are firstly to analyze to what extent the theoretical distinction between communicative and cognitive-oriented dictionary use situations is still valid in situations where users do not use dictionaries significantly, but make an extensive use of online language resources, and secondly to reflect on the theoretical implications of our findings.

## 3 Methodology

The empirical data were collected by means of a controlled experiment during which ten students taking an MSc in International Business Communication (both male and female, and all advanced learners of English for special purposes) at the Copenhagen Business School were asked to solve a concrete L2 text production task based on a case. The experiment produced ten texts, ten screen recordings, ten self-evaluations and ten teacher-formulated rubrics. Although ten students seems as a small group, they are fully representative of students enrolled in the same MSc program. The text production task is also completely in line with the assignments they normally have to write during the term, and with their normal work conditions in an online environment.

The test persons were allowed to use all available language resources for L2 text production, including online dictionaries, online text resources as well as Google Translate, and were instructed to:

- A. Write a LinkedIn article (sales text) in Forum in Moodle
- B. Perform a self-assessment in the quiz module in Moodle
- C. Record their working process by means of an integrated screen recorder
- D. Upload the text, self-assessment and screen recording to Moodle<sup>1</sup>

Prior to the analysis of the empirical data, we formulated a number of measuring points. We wanted to understand, analyze and look further into the axiomatic difference between communicative and cognitive-oriented dictionary use situations, to be able to discuss the relevance and potential development of this so far quite useful distinction. The ten test subjects were asked to write a sales-oriented article to be published on LinkedIn, and the data gave us ample opportunity to study what really takes place in this context.

For each of the test subjects we were able to analyze a screen recording of how the student worked, which tools (s)he used and how (s)he used them, and to analyze what the student wrote in the text, what needs (s)he had as to specialized language elements and what needs (s)he had as to specialize knowledge.

<sup>1</sup> Assessment data were generated for the purpose of further research into the correlation between text production processes and output quality, but will not be used in this article, where focus is on text production processes only.

In the following section of our paper, we will outline and discuss some existing theoretical considerations on communicative and cognitive dictionary use situations related to text production situations in a learning environment.

#### 4 Communicative and Cognitive Dictionary Use Situations

The underlying assumption of our paper is that specialized lexicography in our opinion so far has been based on a highly abstract distinction between two fundamentally different use situations when dictionaries can be of use and are actually used (Tarp 2006:58).

Tarp distinguishes between communicative dictionary use situations, when there is a communication-related need in connection with an ongoing or planned communication task, and cognitive dictionary use situations, when there is a knowledge-related need.

This distinction is one of the cornerstones upon which the function theory is based. The distinction is still valid now ten years later, as will be clear from the following citation from Agerbo and Bergenholtz (2017), which describes communicative and cognitive dictionary use situations as follows:

Communicative situations: the need to get information, which in a specific situation, is necessary in order to accomplish successful communication

- situation in which a person needs help to understand parts of a text
- situation in which a person needs help to formulate parts of a text
- situation in which a person needs help to translate parts of a text

Cognitive situations: the need in a specific situation to acquire knowledge, which you do not already have

- situation in which a person needs to acquire knowledge about a specific (singular) phenomenon or about a more complex theme
- situation in which a person has a goal-oriented need to learn something, either on his/her own or by being taught by someone. (Agerbo & Bergenholtz 2017:35-36)

However, Agerbo and Bergenholtz does realize that dictionary use situations are dynamic. In fact, the authors describe dictionary use situations as follows:

When we use the word situation, it refers to a time at which a certain information need occurs. Such a situation may occur as a result of another situation and thereby be a part of a course of events. Of course, such a situation is related to the preceding situations in the same course of events. (Agerbo & Bergenholtz 2017:24).

In summary, the existing understanding of dictionary use situations still seems to be based on a sharp distinction between communicative and cognitive dictionary use situations, respectively. We believe that the distinction is still very useful when it comes to designing specialized dictionaries based on the function theory, especially because the distinction enables the lexicographer to facilitate the selection and presentation of relevant lexicographic data in specific use situations.

However, the situation driven data selection and presentation does not appear to be that relevant anymore, when users instead use online language resources. According to our data, students in fact do not use dictionaries that much anymore, as noted in Kernerman (2013), which, with a reference to Frank Zappa, notes that “one could say dictionaries are not dead, they just smell funny”.

Things change, and we therefore need to take a critical look at existing theory. As will appear from the following sections of our paper, we will present some new theoretical considerations on communicative and cognitive dictionary use situations based on our empirical data.

## 5 Empirical Data

As already pointed out above, the user survey resulted in ten screen recordings of approximately one hour each, ten LinkedIn articles of approximately one A4 page, ten self-assessments and ten rubric-based teacher assessments.

Table 1 below gives an overview of the user behavior of the ten test subjects and of all resources used for producing the text and post-editing it:

Table 1: User behavior characteristics and resources used to do the assignment

Test Person	User Behavior Characteristics	Test Person	User Behavior Characteristics
1	Produces English text Post-edits English text Reads <i>About us</i> on company's website Reads company's LinkedIn page Watches video on company's website	6	Produces English text Reads case assignment Looks up words on Google Translate Post-edits English text
2	Reads about genre How to write at LinkedIn Reads additional online text resources Produces English text Looks up words on Google Translate Post-edits English text	7	Produces English text Reads case assignment Looks up words on Google Translate Post-edits English text
3	Activates online dictionaries Produces English text Looks up words on V&B, ØKON and BNC Looks up words on Google Translate Post-edits English text	8	Produces English text Used integrated Spell Checker in Word Looks up words on Google Translate Post-edits English text
4	Produces English text Used integrated Spell Checker in Google Docs Reads case assignment Post-edits English text	9	Produces English text Reads online resource about blog posts Reads similar assignment Looks up words on V&B Post-edits English text
5	Produces English text Looks up words on Google Translate Looks up words in BNC Looks up words on Wiktionary Post-edits English text	10	Reads online resource about blog posts Writes structure for LinkedIn article Produces English text Looks up words on V&B Reads similar assignment

Column two in Table 1 outlines the most important characteristics of the user behavior of each test person based on our analysis of the screen recordings, i.e. it shows how the test person did the assignment and which actions (s)he person performed.

As will appear from Table 1 above, the ten test persons seemed to have three different approaches to the focal task.

One group (test persons 3, 5, 7 and 8) seemed to have a clear communicative approach. In fact, this group predominantly used online dictionaries, online language resources and Google Translate, and seemed to focus on producing the English text.

Another group (test persons 4 and 6) seemed to have a mixed approach with both communicative and cognitive use situations, and they also used both Google Translate and different online resources to learn about the structure of a LinkedIn articles and to produce the English text.

Finally, the third group (test persons 1, 2, 9 and 10) predominantly had a cognitive approach focusing on learning as much as possible about the genre, the product, the company, the market and the language used to produce a LinkedIn article.

The first major observation that we made during our analysis of the screen recordings was the very limited use of dictionaries. It was interesting to learn that our test persons almost did not use dictionaries. In fact, we have ourselves observed the increasingly limited use of dictionaries by our own students. However, it did come as a surprise to us that the use of dictionaries was so limited, because the test persons were in fact introduced to a number of online dictionaries (V&B, FAG, ØKON, OED) as well as to a number of online resources, such as Wiktionary, Google Translate and the British National Corpus (BNC) prior to the user study.

This observation supports similar ones described in Leroyer and Simonsen (2017) in a discussion of whether language resources can replace dictionaries, and whether there is a measurable quality of the texts translated and produced by means of dictionaries or language resources. A similar conclusion can be found in Bundgaard (2017), which concludes that even professional translators seem to be abandoning dictionaries, in this case in-house term banks.

The second major observation that we made during our analysis of the screen recordings was that our test persons seemed to have a divergent approach to actual dictionary use situations, in contrast with those situations provided by the theory. The screen recordings showed that our test persons did not seem to behave differently with regard to communicative and cognitive dictionary use situations. In fact, our test persons seemed to use online resources to assist them in both contexts, and did not at all seem to behave differently. Our test persons simply seemed to use online resources to be able to communicate in order to fulfil the aim of their learning assignment, and thereby to be able to obtain knowledge of genre, market, company and medium at the same time and by means of the same online resource. In other words, our test persons seemed to behave the same in both dictionary use situations, as they are interdependent and dynamically embedded in each other. Producing the text seems to coincide with learning how to produce the text.

The test persons also seemed to use the online language resources in connection with both communicative and cognitive-oriented questions, even when the question was a communicative-related one. We can thus confirm our findings in Leroyer and Simonsen (2017), because our test persons also asked Google cognitive-oriented questions like "What is Immersion?" or "What is a LMS?" in connection with writing about the Learning Management System Immersion.

These findings thus question the way functional theory has traditionally treated communicative and cognitive dictionary use situations, and ultimately the way lexicographers should design dictionaries when it comes to text production situations.

The third major observation that we made during our analysis was that specialized dictionaries and online resources for text production are not only used by students to communicate, as one would normally expect, but also to learn how to communicate. Our test persons seemed to use the specialized dictionaries and online resources to learn how to write, and thus these resources support learning situations.

When analyzing the screen recordings, we discovered that when students are in a learning situation then text production is both characterized as cognition and metacognition. Text production is subject to reflections by the students on their own learning process, and we found out that communication

(the actual writing process) serves as a sort of learning tool. Our test persons are in a learning situation dictated by learning outcomes and they learn about the market, companies, genres and corporate communication by writing to a specific market, on behalf of a specific company, about a specific product, and using relevant genre conventions by writing a LinkedIn article.

Overall, we discovered that text production, as a learning situation, is cognition, a fact that finding fundamentally challenges the existing theoretical understanding of dictionary use situations in so far as text production is concerned, and changes our understanding of the axiomatic distinction between communicative and cognitive-oriented dictionary use situations.

Finally, the analysis revealed something we also identified in our user survey in Leroyer and Simonsen (2017). The general IT competences of the test persons do play an important role in how they performed and how quickly they worked. The analysis also clearly showed that all test persons relied heavily on the integrated spell checker and the integrated synonym dictionary in Word.

The next section will focus on a discussion of our findings, and we will outline three overall theses on what we describe as “special text production situations”.

## 6 Analysis and Discussion

As already pointed out above, we propose the expression special text production situations when learners produce texts. In fact, a somewhat similar approach is suggested by Fuertes-Olivera (2018:275), who writes that the specialized dictionary can include “Texts for improving users’ writing skills and hyperlinks to open data sources”. In our opinion, the word “improving” opens up a discussion of learning situations and learning processes.

Based on our analysis, we argue that learning processes in concrete text production situations are dependent on the internal, autonomous knowledge creation processes and metacognitive reflection processes during the actual application of knowledge. All this takes place when the student produces a text. The learning processes that take place during the internal and autonomous text production processes are crucial to remember, and in our opinion play a major role in the selection, access, use and design of lexicographic resources.

We would argue that what we have here are extra-lexicographic “special text production processes”. They are not communicative use situations, but instead purely cognitive use situations of a special type and as we already pointed out above, the existing theoretical literature has so far not discussed this special situation. Our test persons were in a learning situation, and that dictated their knowledge acquisition processes, their knowledge application processes and their information retrieval processes in a constantly reciprocal interaction with the actual L2 text production processes.

Our empirical data showed that while producing the L2 texts, the test persons

- Learn about the product (in this case a Learning Management System) in L2
- Learn about sender, receiver, message (in this case LMS specialists, university partners, market, customers) in L2
- Learn about media and channels (in this case blogs and LinkedIn) in L2
- Learn about genre and text conventions (in this case sales blogs and LinkedIn articles) in L2
- Learn about rhetoric, argumentation and sales phrases (in this case pathos, AIDA etc.) in L2
- Learn about special terminology (in this case about learning software) in L2
- Learn about IT tools and their ability to assist specialised text production in a foreign language.

The goal of the test students was not to communicate (the communicative situation of the assignment is also a mock situation), but to learn and become better at producing texts and communicating. So the cognitive process of learning takes place during the actual text production phases. In other words, the knowledge acquisition processes and the knowledge application processes dictate all aspects of the text production process, including the metacognitive processes before, during and after the text production process.

We argue that text production in a learning situation is both cognition and metacognition – and that communication as such is a learning tool catalyst. Text production is the arena upon which the user learns about product, market, genre and so on by writing about these things, and this very fact challenges the existing understanding of lexicographic processes and the way lexicographic resources are designed.

Test persons 1 and 2, for example, do not produce texts to communicate. They clearly produce a text to learn how to communicate. They do not look up words to write, but to learn how to write. As will appear from the overview in Table 1, test persons 1 and 2 spent the majority of their time learning about the product, the company, the market, the genre, the channel, the medium and the language used. So their information search and text production processes were dictated by the cognitive learning situation.

If we take the course from which our test persons were recruited as an example, the learning objectives are described as follows:

At the end of the course, students are expected to be able to

- Analyze, reflect on and be able to produce a professional solution to a given communication challenge
- Be able to reflect on and enter into a professional dialogue with stakeholders about the appropriateness of a given solution to a communication challenge relative to the strategic aims of the organization
- Use grammatically correct and situationally and culturally adequate, professional language to communicate the information in question across the relevant media to the relevant target groups in writing as well as in spoken language (CBS 2018).

Based on the learning objectives for this module, the teacher decided to realize these learning objectives by especially focusing on the following study activities (cf. Laurillard 2012).

- Acquisition
- Production
- Practice

Based on these three study activities, the teacher planned and facilitated a number of learning activities including the case assignment, which the test persons was asked to solve, i.e. to produce a LinkedIn article about a specific type of learning management system for a specific type of target group.

So based on these learning objectives, study activities and the learning activity in question, a model for a learning-supporting, specialized lexicographic resource for L2 corporate communication might look like Figure 1, below.

As can be seen in the figure, the basis of everything is the learning situation.

The five lower boxes describe what the students need to learn during the defined learning activities, while the upper boxes describe what kind of lexicographically selected and ordered information and data they need to learn about the product, market and competitors, for example.

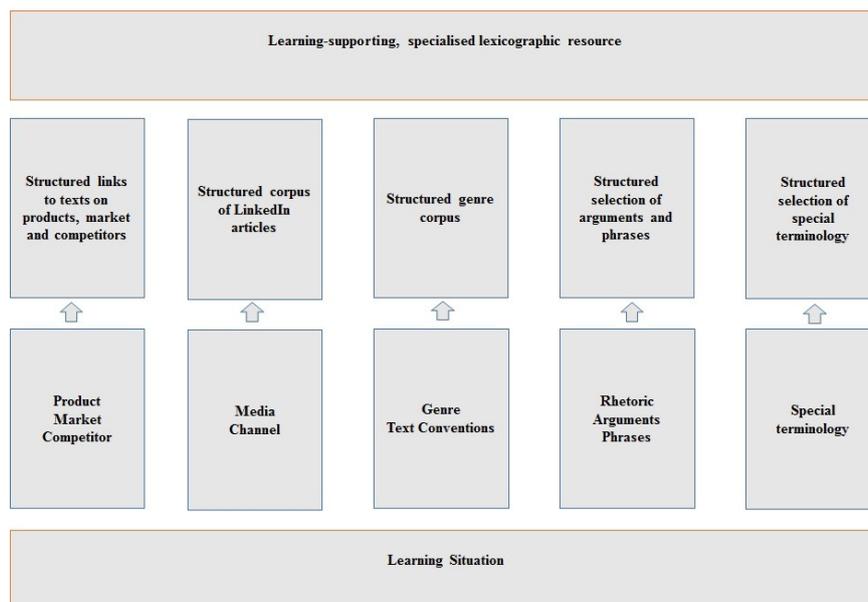


Figure 1: Learning-supporting, specialized lexicographic resource

In summary, it is argued that specialized lexicography could and should play an integrated role in learning. Not just as a tool that can be deselected by the user, but as an integrated and indispensable part of the learning process.

In fact, the very lexicographic method of selecting, structuring and ensuring easy access to data would be a huge benefit for everybody who wants to learn new competencies, just as modern technology in fact already makes it possible to integrate learning-supporting elements in already existing learning platforms.

Specialized dictionaries, including specialized and structured corpora or linked data, are as we see it 'predetermined' to support learning, and based on our findings and our theoretical considerations we have formulated three theses, as follows:

#### Thesis 1

Specialized dictionaries for text production are predetermined to develop into specific learning instruments in specific learning situations.

#### Thesis 2

Specialized language and specialized knowledge are related to each other through a dialectic relation, which is constitutive of information search and retrieval processes. So far, this distinction has been useful, as it has been aimed to speed up search and data retrieval processes through the design of monofunctional dictionaries, and to reduce search results and data accumulation. Yet, the cost has been that such lexicographic design structures have led to a fragmentation of the lexicographic data at the expense of text data.

#### Thesis 3

New information technology, and particularly linked data formats, have completely altered the basic grounds for human data access and data processing. Specialized online language resources that make use of linked data formats allow users to make searches in texts directly, and to take advantage of the dialectic relation. It may be trivial to point out, but we seldom read words in isolation nor do we write them in isolation, but in texts. New technology now makes it possible to build up word nets from dictionary resources and expand relations between words.

## 7 Conclusion

In this article, we have reflected on the sharp distinction between communicative and cognitive-oriented dictionary use situations based on empirical data from ten test persons.

To our first research question about whether we should still maintain a distinction between communicative and cognitive-oriented dictionary use situations in L2 text production contexts, we found that the distinction does not make much sense anymore when users make extensive use of online language resources and are immersed in a learning situation.

To our second question about the potential theoretical implications of our findings, we first found that this changed behavior calls for new theoretical considerations on dictionary use situations. We found that it does not make much sense talking about two separate situations, when users see them as mutually interdependent and embedded in each other. We also found that the axiomatic distinction between communicative and cognitive dictionary use situations does not make much sense in learning situations. Our empirical data showed that a per se communicative-oriented situation (writing a text) in reality is cognitive-oriented, because it is about learning how to produce a text instead of simply producing a text.

It is now up to specialized lexicography to formulate new theories that are based on a dialectic and mutually interdependent relation between communicative and cognitive-oriented dictionary use situations for learning purposes.

Specialized lexicography needs to formulate new theories and use these novel insights to design information search systems, which on one hand have inherited the user orientation and determination of functional lexicography, and which on the other have individualized needs-adapted access to relevant information in online text resources. Also, special attention should be given to specific information needs arising during the course of post-editing processes, so users can keep a critical distance to the relevance of the assistance they get and even question its authority, as needed.

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