

CONTENT BASED INSTRUCTION IN TEACHER EDUCATION: RE-SHAPING PRE-SERVICE TEACHERS' BELIEFS ABOUT LANGUAGE TEACHING

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Introduction

Content-based instruction (CBI), also referred to as content-based language teaching (CBLT), is an approach to language teaching in which students are taught language through academic content. This approach has been implemented in a growing number of contexts worldwide in the last few decades. In European contexts, a similar approach referred to as content and language integrated learning (CLIL) deals with teaching of academic content and language in the same class. CBI, CBLT and CLIL have been argued to increase student motivation, promote cognitive engagement, and enable acquisition of both basic interpersonal communication skills and cognitive academic learning proficiency (Lightbown 2014). In addition, CBI has the potential to promote intercultural awareness and to prepare learners for studying and working in another language (Dale & Tanner 2012). As the differences between the types of programs offered through CBI, CBLT and CLIL are not the main focus of this project, nor were they highlighted in the course in which the data were collected, the term CBI will be used in the main body of the paper, while all three terms may appear in the quotes from the data.

Despite the many benefits of CBI, many foreign language teachers find it “difficult to conceptualize, design, and implement, be it in traditional foreign language programs or in intensive content-based programs” (Donato 2016: 25). Most notably, teachers report difficulties associated with integrating academic content and language in a single lesson, as well as struggle with re-defining their own teaching identity and assuming new roles and responsibilities as CBI teachers (Cammarata 2010a, 2010b; Dale & Tanner 2012). Because teachers' personal beliefs about language teaching and learning are often deeply rooted in their own previous learning experiences (Vélez-Rendón 2002), the difficulties associated with transitioning from language-focused approaches to CBI are linked to “a deeper struggle related to their difficulty in confronting and letting go of their beliefs about how languages are learned” (Cammarata 2010b: 98). The present study sought to investigate how pre-service

teachers' beliefs about CBI evolve during a semester-long course that specifically focuses on the core principles of CBI and the implementation of CBI in foreign language instruction.

Background to the study

Theoretical foundations and research-based support for CBI

Theoretical foundations in support of CBI include Krashen's comprehensible input hypothesis (1989), Swain's comprehensible output hypothesis (2005), and sociocultural theory (Vygotsky 1978). In CBI lessons, students receive extensive, proficiency level-appropriate, meaningful and relevant input, while at the same time they have multiple opportunities to engage in meaningful communication. Rather than participating in a simple exchange of information, learners have to negotiate meaning as well as extend their knowledge at increasing levels of complexity in interactions with their instructors and peers. Research on program outcomes conducted in a variety of program models suggests that CBI results in language and content learning, leads to increased motivation, and provides optimal conditions for grammar learning (Dueñas 2004; Grabe & Stoller 1997).

Additional extensive evidence from research in support of CBI comes from studies on cooperative learning, metacognitive strategy instruction, and extensive reading, all of which are consistent with the principles of CBI and are easily integrated in classrooms guided by this paradigm. Research on the effects of cooperative learning suggests that students make greater gains when they work in small groups, especially when given clear learning objectives, specific and attainable targets, and individual responsibility within the group (e.g., Stahl 1994; Slavin 1995). Likewise, research on strategy learning has demonstrated that strategy awareness and development work best when integrated within the regular curriculum, as a component of all learning activities (e.g., Pressley & Woloshyn 1995). Finally, research shows that extensive reading across a range of topics leads to improved language

abilities, greater content-area learning, and higher motivation (e.g., Elley 1991). Research in the fields of cognitive and educational psychology, including cognitive learning theory, depth of processing research, and expertise research, also provide a strong rationale for CBI (Grabe & Stoller 1997). Although much of this research has been conducted outside of the field of second language acquisition, the findings are strongly linked to CBI (Dueñas 2004).

Integrating content and language has many benefits for language learners. Learning becomes more relevant and cognitively demanding, which leads to increased learner motivation. Learners develop communicative skills in a range of domains, including formal and informal, general and academic. Interactions in CBI classes are meaningful, with attention being given to both content and language, which allows for achievement of higher levels of proficiency than in traditional language classrooms (Dale & Tanner, 2012). These and many other benefits of CBI explain why this paradigm is gaining hold in language classrooms worldwide (Lyster & Ballinger, 2011).

Challenges with implementing CBI

While CBI comes with many advantages, there are potential challenges for both learners and teachers when implementing it. The challenges for learners include potentially compromised mastery of academic concepts and skills due to limited proficiency in the language of instruction, and a feeling of intimidation when required to use L2 in the classroom (Lyster & Ballinger 2011; Tedick & Cammarata 2012). Teachers can also find CBI difficult to implement, and for a variety of reasons. Content teachers often do not feel sufficiently competent to act as language experts in the classroom, while language teachers are not always confident in their own expertise in the content area they are expected to cover (Cloud 1998; Lightbown 2014). Another challenge with CBI repeatedly mentioned in the literature is finding the right balance between the amount of time devoted to language and content (Stoller & Grabe 1997). Various institutional constraints such as few opportunities for collaboration among teachers have also been identified as limiting factors in implementing CBI (e.g., Troncale 2002).

As teachers are the most important agents of change in the classroom, teacher beliefs about CBI are a deciding factor in whether and how the approach can be carried out. According to Cammarata (2010b), “successful implementation of CBI also demands attention to teachers’

process of change as it relates to curricular innovation” (563). In particular, foreign language teachers report challenges implementing CBI because they find the concept difficult to grasp or accept as a possibility (Cammarata 2010a; Donato 2016), or because it is not congruent with their professional identity (Cammarata 2010b). Therefore, a particular CBI teacher training course can only be deemed successful insofar as it transforms teacher beliefs about how language instruction can be delivered. This is a complex and challenging task because teachers’ classroom beliefs and pedagogical choices are shaped by their own experiences as learners, a concept referred to as ‘the apprenticeship of observation’ (Lortie 1975). As Littlewood argues, however, to counterbalance the effect of these extensive learning experiences that have provided teachers “with powerful mental models of teaching which are not easily changed by the formal input from courses in pedagogy” (2016: 9), teacher educators can model pedagogical practices they want pre- and in-service teachers to adopt in their own classrooms. In the case of CBI, this means that while exploring the principles of the paradigm, teachers themselves are engaged in various CBI activities.

Research questions

To date, research on teacher views on implementing CBI in foreign language contexts has mostly examined in-service teachers who enrolled in professional development programs that focus on CBI with pre-existing baggage of many years of teaching experience and therefore solidified teaching philosophies. The present paper examines how pre-service teachers with limited teaching experience transition from more traditional views of language learning and teaching to new instructional possibilities offered by CBI. Although their views of teaching are affected by the *apprenticeship of observation*, it can be expected that their views of language learning and teaching are more flexible than those of experienced teachers. The research questions that guided the study were:

1. To what degree did the English language teacher trainees believe that they would implement CBI teaching practices in the classroom at the start of the course and at the end of the course?
2. What were the teacher trainees’ views about the challenges and benefits of implementing CBI at the end of the course?

3. How were the teacher trainees' views about CBI reflected in their teaching philosophies written one year after the completion of the course?

Method

Context and participants

This project was conducted in an English as a foreign language (EFL) teacher education program at a large public university in Norway. Participants were 47 second year students, 35 females and 12 males. All participants had had between six and nine weeks of school-based practicum experience prior to data collection and completed an additional three weeks of practicum during the course of the project. As a part of their credit requirement in English, the participants were required to take a semester long module on CBI, which is where most of the data for this project were collected. At the end of the module, the students were expected to reach the following objectives:

1. Explain what CBI is and how it differs from other approaches to language teaching.
2. State the findings from research that support CBI and relate research and theory to your future teaching context.
3. Analyze several examples of lesson plans and activities that integrate a range of academic subjects and English language teaching.
4. Design CBI teaching materials, activities, lesson plans, and assessment for a grade-level and content area of their choice.

To reinforce the content and the process of learning (Littlewood 2016: 9), the course instructor employed the principles of CBI in the course activities. In other words, the students were involved in CBI learning while learning about CBI, an approach to teacher training known as loop input, which “involves an alignment of the process and the content of learning” (Woodward 2003: 301). Unlike other forms of hands-on learning techniques, loop input includes a “decompression time” (302) during which students transition from learning how to implement each approach to deeply reflecting on why it can be appropriate to implement in their own teaching. The teacher modeled “good” CBI practices such as guiding lessons with specific, measurable content and language objectives, and created multiple opportunities for students to engage in

collaborative learning. For instance, while learning about the benefits of CBI, students participated in a jigsaw task working in small groups. Each group was assigned one specific benefit that the students had to explore in depth, summarize, and present to the rest of the class. Similarly, to illustrate the benefits of extensive reading for language learning, the teacher created opportunities for students to read large amounts of interesting, relevant, and appropriate reading material throughout the semester. Such practices not only allowed for more in-depth processing of the content, but also led to increased consciousness of how CBI works and helped the students improve their own language skills.

Data collection and analysis

This study used a mixed-method design. Quantitative data were collected using a structured questionnaire consisting of 36 statements about implementation of specific CBI pedagogical practices (Dale & Tanner 2012: 15-17). Examples of the statements include:

1. At the start of a lesson or topic, I find out what learners know about the topic.
2. I encourage my learners to interact in my classes and use a lot of pair and group work.
3. I help learners notice how language is used in my subject, for example we look together at the grammar or we work on the vocabulary of the subject.
4. I use a variety of ways to assess my learners on both content and language.

Participants responded to each statement using a 5-point Likert scale: 4 = always, 3 = often, 2 = sometimes, 1 = occasionally, 0 = never. The questionnaire was administered two times: pre- and post-semester. Participants were assigned numbers to anonymize the data. The results were interpreted using the scoring guidelines provided by Dale and Tanner (2012).

Qualitative data were obtained through an anonymous online course evaluation survey that the students were asked to complete at the end of the semester. Six open-ended questions were included in the survey, but only one is relevant for the present study, namely:

1. To what extent is it possible to use CBI when teaching English in the Norwegian context? Do you think you will apply this

approach in your own teaching? Why or why not? And if yes, how will you do it?¹

In addition, teaching philosophies (Appendix A) were collected from 40 students who enrolled in another course with the same instructor one semester after the CBI module. These texts were examined to determine if there was a long-term effect of the CBI course on the way these students conceptualize language learning and teaching.

The quantitative data (questionnaire) were analyzed using descriptive and inferential statistics (means, standard deviation, paired sample t-test) to determine whether the difference between the pre- and post-semester scores was statistically significant. Qualitative data from the survey were coded using the following a-priori codes:

1. To establish whether the teacher trainees believe it is possible to implement CBI in the Norwegian context: yes (Y), no (N), maybe/to some degree (M).
2. To analyze the teacher trainees' views about the challenges and benefits of implementing CBI at the end of the course: difficulties (DIF), advantages (ADV), specific ideas for implementation (IMPL).

Finally, the teaching philosophies were examined for either the presence or absence of mentions of CBI. A few quotes were selected to illustrate the ways in which the students conceptualize the implementation of CBI in their own practice as language teachers.

Results

Self-reports on implementation of CBI

The mean pre-semester questionnaire score for all participants was 85,83. The mean post-semester questionnaire score for all participants was 109,09 (Table 1). This implies that the teacher trainees' perceptions of themselves as CBI teachers evolved from being effective CBI teachers who apply many of the aspects of CBI methodology in the classroom to being well-informed and experienced CBI teachers who understand why they choose CBI as a teaching approach and know how to put it to practice (Dale & Tanner 2012: 18).

The difference in the performance on the questionnaire at the beginning of the semester (pre-) and at the end of the semester (post-) was tested with a paired-sample t-test. Results show a large effect size and a statistical effect for difference between testing times (Table 1).

¹ In most Norwegian schools, teachers are given a fair amount of freedom when selecting materials and methodologies they consider the most suitable for their teaching contexts. However, some schools may impose textbooks, whereas at others, teachers may be required to coordinate their teaching with a team of teachers responsible for a particular grade level.

95%CI	Mean pre- (SD 1)	Mean post- (SD 2)	N	t-value	p-value	Effect size
-28,43, - 18,07	85,83 (23,77)	109,09 (14,38)	47	-9,036	P<.0005	d=1.18

Table 1: Summary results paired-sample t-test

Perceived benefits and challenges of CBI

The analysis of the qualitative data from the open-ended survey question indicates that a little over a half of the participants, or 56%, thought that *it is possible* to implement CBI in the Norwegian context, with 39% reporting that they thought it *may be possible* to some degree. None of the participants thought CBI was *impossible* to implement and only two (or 0.04%) were *not sure*. Of those who stated they believed that it was possible to teach through CBI in Norwegian classrooms, many also commented that they found the approach fascinating, for instance “I will use it, the concept fascinates me [...] I want my students to become superior to all other students and I think CBLT is a key to make it happen.” Others explained that they have already tried out CBI during their teaching practicum and they thought it worked well, as the following comment indicates: “I have already used [it]. The students reacted very well to the lesson, which is a sign for me that CBLT works in practice.” Yet others noted specific benefits of the paradigm, for instance “students will have more motivation [...] and they will forget that they are thinking in their second language” and “the approach [gives] an opportunity for creativity.” In all, the majority of the participants appeared to be quite positive about CBI.

The students who were slightly more cautious about their enthusiasm for CBI and indicated that it *may work if...* listed various reasons in support of their thinking. Collaboration with other teachers and support from the school administration was mentioned a few times. One participant commented that “It depends on the cooperation of other teachers [...]. I will apply this approach if allowed,” and another one explained that “it depends on the school culture.” Another student, however, actually noted the contrary, stating that CBI may be easier to implement “in my [own] lesson than together with another teacher, especially if the other teacher is not an English teacher.”

The students were also cognizant of many obstacles that may prevent them from using CBI when teaching EFL. The challenge with implementing CBI that was mentioned a few times was resistance from other teachers and school administrators. For instance, one participant explained that it may be difficult to convince “experienced teachers who are already satisfied with their way of teaching” to try CBI. Another perceived hindrance was the amount of extra time and work it takes to create CBI lessons and teaching materials, as indicated in the following comment: “I believe using CBLT involves a lot of work. It is possible to some extent, but I do not believe I have the time to implement CBLT in all of my lessons.”

Place of CBI in teaching philosophies

Forty students who enrolled in the next module of their EFL teacher education program the following semester submitted teaching philosophies as a part of the required coursework. These texts were examined for either presence or absence of mentions of CBI. Eighteen texts (45%) contained no mention of CBI. The remaining 22 texts (55%) named CBI as an approach, and twenty of those contained a fairly extensive description of CBI (about one paragraph), and how the authors thought it could be implemented in their own teaching. Here is how one student expressed her thinking about the role of CBI in language teaching:

I think bringing CBI in your teaching creates a great opportunity to successfully teach a new language and academic content at the same time. It feels efficient, but also motivating for my teaching when my future pupils can learn two things at the same time. Hopefully that will give them the opportunity to see a rapid progress in both subjects. For me as a teacher I believe this approach will give me the chance to build bridges between subjects, and “save” some time.

This student focused on the benefits CBI would have for her future students and for herself. She highlighted the advantages such as increased motivation and faster gains in proficiency in

English as well as in the development of content knowledge for her students. From her own perspective as a teacher, she sees CBI as beneficial because combining language and content teaching has the potential to save valuable instruction time. An even greater degree of enthusiasm about CBI can be noted in the excerpt that follows:

I have seen many good examples of CLIL activities and would like to try it out. To engage the students to learn English in a meaningful way I think the English lessons I have seen in the Norwegian schools so far need to be "spiced up" a bit, and I want to do my best to make that happen.

In general, most of the teaching philosophies that included mentions of CBI contained a brief description of the premises of the approach and highlighted a few of its benefits. Like the excerpts above, these usually included increased student motivation, making communication more meaningful, and the ability to work with cross-curricular projects. Two students, however, additionally mentioned intercultural competence, as the following excerpt illustrates:

Using CBI is something I see great value in. By learning about another subject, e.g., social science, in English, you develop your vocabulary and your cultural understanding, which is one of the four overarching goals in the national curriculum.

Overall, however, the teaching philosophies resonated with the same mix of excitement and caution about CBI that was found in the survey responses. In other words, the students noted both the benefits and the challenges of implementing CBI in their own classroom. Because they were not explicitly instructed to discuss CBI in their teaching philosophies, it can be assumed that the students who did so found CBI interesting and relevant and are likely to use it once they become teachers.

Discussion and conclusion

Teacher education courses have the potential to transform pre- and in-service teachers' views of best pedagogical practices. This project aimed to examine the extent to which a pre-service course on CBI succeeded in reshaping teacher trainees' self-perceived degree to which they implement CBI methodologies in teaching of English as a foreign language.

According to Cammarata (2010b), becoming a CBI teacher is challenging because it "requires one to explore a drastically different way of conceiving teaching and learning, involves becoming familiar with new theories and pedagogies and then finding ways to progressively integrate the new vision into

one's existing framework" (577). The self-reports completed at the beginning of the CBI semester suggest that the teacher trainees were already on their way to becoming effective CBI teachers because, as they indicated, that they had already been applying several aspects of CBI methodology in their own teaching. The CBI course curriculum, which not only familiarized the students with the CBI paradigm but also allowed them to participate in model CBI activities, helped the students to transition to the next level of CBI implementation. The results of the same questionnaire taken at the end of the semester indicate that on average, the students became "well-informed and experienced" CBI teachers who, according to the scale proposed by Dale and Tanner "activate both language and content [...], provide multimodal input and know how to select and adapt appropriate materials" (2012: 18). These results suggest that the participants' views about the degree to which they would implement CBI evolved as a result of being enrolled in the course.

The participants' responses to the open-ended survey question contained a mix of optimism and caution about CBI. The fact that the majority of the teacher trainees thought CBI is possible to implement in Norwegian EFL classrooms suggests that the CBI course may have empowered them to try a new and fascinating way of teaching English. Even though several of the participants noted that special conditions, such as communication and collaboration with other teachers, support from the school administration, and personal time investment would need to be fulfilled for CBI to be successful, they perceived CBI as an interesting opportunity they would be willing to try. These sentiments were still present in the students' thinking about EFL teaching a year later, when about a half of the students who wrote their teaching philosophies included statements about CBI in their texts.

It has to be acknowledged that this study is not without limitations. Most importantly, because the data were collected through self-reports rather than direct observation of teacher actions in the classroom, it is possible that the teacher trainees either inflated or diminished the degree to which they implement CBI methodologies. As Dale and Tanner (2012) acknowledge, the results of the self-report questionnaire have to be taken with caution. In other words, because we can expect some degree of disconnect between what teachers believe and what they practice, it cannot be concluded with certainty that the results reflect how these teacher trainees actually practice EFL teaching.

Transitioning to CBI is a complex process that entails much more than learning about the principles of the paradigm. To fully embrace CBI, teachers need to re-conceptualize their existing vision or philosophy of teaching, and to be able to apply it in the classroom, they need to meet with a favorable teaching context in which they receive support from other teachers and administrators (Cammarata 2010a; Cammarata 2010b; Donato 2016). However, it is important to plant the seed of CBI early on. This project with pre-service teacher suggests that a CBI course that models CBI ways of teaching can at the very least awaken the students' awareness of CBI as an alternative approach to language teaching and pique their interest in applying it once they enter their own classroom. Whereas it cannot be expected that a semester-long course can turn teacher trainees into master CBI teachers, it is a solid first step. If teacher trainees continue to encounter references to CBI in other courses in their program, and if they have opportunities to work with CBI mentors and participate in professional development that supports the continued evolution of their CBI teacher identity, we are likely to witness an increase in the number of language classrooms that employ CBI, a paradigm, which, in the words of one of the participants in this project "has so much to offer to me as a teacher and my future students."

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Appendix A:

Description of “My teaching philosophy” assignment written by the students one semester after the completion of the CBI course.

A teaching philosophy is a personal statement about your evolving educational beliefs. In this module, you are going to summarize your beliefs about learning and teaching of English as a foreign language. Important note: statements that contain information about learning and teaching in general will not be accepted. For example, mentions of Dewey or Vygotsky, unless they pertain specifically to L2 learning and teaching, are not to be included in this assignment!

There are many ways to approach the development of this statement. The approach and format that you select should be based on what is meaningful to you and that will be understood easily by the audiences with whom you will share your philosophy (such as future employers and your students). Typical areas that are addressed are: (a) Your motivations for teaching English (b) The teaching methods you believe are best (c) Your teaching goals, methods and strategies (d) Explanation of how your teaching is consistent with these goals (e) Personal goals that you have set yourself as an English teacher. Your teaching philosophy should be about 1.5-2 pages long, 1.5 spaced, Times New Roman font size 12”. You are required to use and **highlight** at least 10 SLA terms (professional terms that you have encountered in your readings and our class discussions this academic year) and at least five in-text references to professional literature in your statement.