The Articulation of Formative
Research and Classrooms
Projects in the Language
and Culture Class in an
Undergraduate English Teaching
Program¹

Articulación de Prácticas de Investigación Formativa con los Proyectos de Aula de las Clases de Lengua y Cultura Anglófona en un Programa de Licenciatura en Lengua Extranjera

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Abstract

This article shows the results of a research project which searched to answer how to articulate formative research with classroom projects in an undergraduate English teaching program. To accomplish the purpose of this paper, the document will focus on the two specific objectives of this qualitative research: document revision, and knowing about students' and teachers' perceptions about the projects, to finally show the main elements to articulate the formative research with the classroom projects in the Anglophone Language and Culture course. The article develops three theoretical concepts: formative research, classroom projects and praxeological pedagogy. The results presented come from the revision of the current methodological guides about the classroom projects in the program and students' and teachers' perceptions about them.

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Finally, the article ends with the presentation of the principal elements to articulate formative research from the classroom projects in the program.

Keywords: Formative research, classroom projects and praxeological pedagogy

Resumen

El presente artículo muestra los resultados de un proyecto de investigación que buscaba articular las prácticas de la investigación formativa con los proyectos de aula en una clase de inglés de un programa de licenciatura. Para alcanzar este objetivo, el artículo se centrará en los dos objetivos principales de esta investigación cualitativa: la revisión documental y las percepciones de estudiantes y docentes acerca de los proyectos de aula actuales del programa, para finalmente mostrar los elementos que permiten articular la investigación formativa con los proyectos de aula de la asignatura de Lengua y Cultura Anglófona. El artículo desarrolla tres constructos teóricos: investigación formativa, proyectos de aula y pedagogía praxeológica. Los resultados que se presentan se derivan del análisis de las guías metodológicas de los proyectos de aula del programa y de las percepciones de los estudiantes y docentes acerca de los mismos. Finalmente, el artículo cierra con la presentación de los elementos principales para articular la investigación formativa con los proyectos de aula del programa.

Palabras claves: Investigación formativa, proyectos de aula, pedagogía praxeológica

Resumo

O presente artigo mostra os resultados de um projeto de pesquisa que buscava articular as práticas da pesquisa formativa com os projetos de classe em aula de inglês de um programa de licenciatura. Para alcançar este objetivo, o artigo se centrará nos dois objetivos principais desta pesquisa qualitativa: a revisão documental e as percepções de estudantes e docentes acerca dos projetos de aula atuais do programa, para finalmente mostrar os elementos que permitem articular a pesquisa formativa com os projetos de aula da disciplina de Língua e Cultura Anglófona. O artigo desenvolve três construtos teóricos: pesquisa formativa, projetos de aula e pedagogia praxeológica. Os resultados que se apresentam se derivam da análise das guias metodológicas dos projetos de aula do programa e das percepções dos estudantes e docentes acerca dos mesmos. Finalmente, o artigo encerra com a apresentação dos elementos principais para articular a pesquisa formativa com os projetos de aula do programa.

Palavras chaves: Pesquisa formativa, projetos de aula, pedagogia praxeológica

Introduction

ormative research has become one of the pioneers at the moment to include research in pedagogical dynamics in order to take students beyond the simple and instrumental management of knowledge. In this respect, Parra (2004) affirms that to reflect about research in the university is to reflect about the university itself; this makes research a very important process in higher education, since this should not be an "extra" aspect in the entire education process, rather its main and inherent aspect regarding its function in the society (Gutierrez, 1989). This type of research is then used to build knowledge and find a clear perspective of academic work by teachers and students. In the same way, there is a necessity of research that goes beyond instruments and methods, to become a "culture" and an attitude to be sown in students and teachers by giving them the possibility to reflect about their reality. Guided by this inevitability of including research in the different academic processes in higher education, particularly in the development of foreign language competences, this research project was born under the question: How to articulate educational research with the classroom projects in the Anglophone Language and Culture subject?

To answer this question, this project focused on the design of a syllabus from which to work on formative research with classroom projects in the Anglophone language and culture course in an undergraduate foreign language teaching program in a university in Bogotá, Colombia. For this purpose, three main aspects were followed: first, the definition of what characterizes research in the institution; second, the analysis of the elements that have guided the classroom projects so far in the course; and third, the analysis of the perceptions of students and teachers about the classroom projects. Finally, these aspects were combined with theoretical elements about formative research and classroom projects.

Literature Review

Formative Research

Research is a process that contributes to different dynamics in the field of education, in terms of methods and as a possibility of approaching knowledge in a different way, where creativity and innovation play a very important role (Restrepo, 2003). This breaks with the traditional

view of research mainly seen as a static process in terms of hypotheses and results, and moves towards searching for knowledge and new forms of learning and teaching. In a more specific sense, formative research has been somewhat contradictory in comparison to research in a strict sense although its importance regarding pedagogy is undeniable. For Parra (2004), research is the process that keeps the logical and methodological structure, and it will be educative if its function is to contribute to the teaching purpose. In other words, this is the idea of research to show positive and exact results changes at the moment of being included within the educative field, where it is possible to be used to improve and enrich pedagogical practice. This should not be seen as a negative aspect; rather this makes research more dynamic and multi-dimensional

This aspect moves teachers to a different place in their teaching exercise since this is not only assumed in terms of strategies and tools, but as the living field where research can be born: their practice as the field of their construction of knowledge. Thus, formative research is the first step to work on research from different academic activities in the school because university education does not end with professional or technical education (Gutiérrez, 1989). With respect to this, formative research may be seen as the first step to include research in different aspects of the academic life in the university: "Formative research is not only about content but about how to impart this content" (Parra, 2004, p. 59).

Concerning the implementation of formative research in the real educative context, the most important thing to understand is that it is not one-dimensional (Restrepo, 2003) since it offers several possibilities in terms of research and pedagogy in which there are two possibilities: incomplete problems in which students solve everything, and a problem set presented by the teacher. Similarly, "research inside the classroom is a whole procedure of organizing knowledge that takes pedagogy further than the simple transmission of knowledge centered in the curriculum and seen as a product, in which the plan and the objectives are implemented by the teacher in order to produce the desired knowledge on the part of students" (Grundy, 1991, p. 45). Formative research explores a pedagogy that seeks for active students in their own processes through the research dynamics, which also implies a different relation to knowledge.

On the other hand, formative research develops several competences that are useful in terms of research and pedagogy. These competences are not only important when developing learning processes,

but also to take students to a more comprehensive education which goes further than the management of information or content. From Anzola's (2005) perspective, the role of research in the university is essential in order to develop students' critical and argumentative skills. In this way, formative research not only brings research skills, but also competences which are very important in the cognitive development of students, such as the unlimited use of language to facilitate the communication, thinking in terms of a process, and evaluation in terms of decisions and attitudes.

Additionally, formative research implies a different view about building knowledge about reality. This means that the way that students and teachers observe and analyze their real context—and its problems—is more critical and requires them to show their own interpretation about it since formative research investigates problems that can be analyzed in different fields. This new perception of knowledge and subjects immersed in reality also implies a different way of approaching, reading and understanding reality, since "this is not far from the school but it is thought from the school as a possibility of building knowledge from the reality itself will determine the course and development of the knowledge production and the education of researchers" (Cerdá, 2007, p. 62).

Finally, formative research contributes to the change in the ways of learning and teaching. "It considers the learning process as a knowledge building process, and the belief of the correlation of theory and pedagogical experience" (Anzola, 2005, p. 70). According to this, it is possible to conclude that formative research is a perspective that goes two ways: the possibility of guiding students' learning processes to develop pedagogical and research competences in a new perspective of building knowledge from their own reality, and the possibility for teachers to reflect about their practice and change it by turning it into in their first source of research.

Classroom Projects

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Classroom projects can be considered as a route to be followed in the learning process. They can be assumed as a way of organizing teaching and processes, and as a combination of activities destined to a specific purpose that can be used in different situations (Estarico, 1999). In this way, the organization of the cognitive process is seen as the development of different abilities and competences in students while they acquire and use contents to respond to a specific task, in which content is not the main point but yet another element in the development

of cognitive and research competences. Similarly to formative research, the starting point of classroom projects is the observation of reality as a problematic phenomenon that can be analyzed. From here, it is possible to see how the learning process starts by observing the reality in which students and teachers are immersed critically. This means, as a didactic tool, classroom projects imply a different view of the learning and teaching processes since the main element is not the content but the real problem to be solved by the participants.

In addition, the development of competences through classroom projects is not centered in only one ability. Further, projects are very comprehensive in terms of knowledge and attitudes developed in students. In Estarico's (1999) words, classroom projects contribute to discovery and knowledge building. They are related to the theories and practices that promote pedagogy and research. In this sense, classroom projects are similar to formative research since both include pedagogical and research competences while they are developed in the classroom. Moreover, classroom projects favor the discovery and construction of knowledge, are cooperative and promote the integration of knowledge (Estarico, 1999). They also promote a different way of seeing teaching and learning processes besides a new relation with knowledge, which is not given but built along the route.

A classroom project starts from an objective to be reached and the plan of a series of activities to achieve it (Hernández et al., 2011). According to the authors, a project is a pedagogical activity in which a specific problemtaken from reality is studied. The participants understand the objective of the activities, which are planned corresponding to the learning objectives. Students' work is systematized in order to allow for further reflection. The priority is the educational objective, and there is constant revision of what has been done to see if something needs to be changed in order to reach the pedagogical purpose. In addition, when working on a classroom project, it is first necessary to define a *task goal*, and afterwards to set the *pre-tasks* to be developed to reach the final objective. Nevertheless, before planning an activity a needs analysis should be done in order to make decisions about the contents and the methodology in the course (Vilas, 2012).

In spite of the possibilities that classroom projects offer, Stoller (1997) maintains some general stages that a project shall follow in methodological terms: 1) to agree on the topic of the project; 2) to determine the final product; 3) to structure the project; 4) to collect information about the topic of study; 5) to gather and analyze the information; 6) to present the final product; and 7) to evaluate the project. This is what is called the organization of the learning process,

in which competences and results expected shall be included. Besides, it is important to clarify that the topic should come from the analysis of real problems, and the first and main objective is to answer or to give an alternative to the situation identified as a problem to be solved. To summarize, classroom projects agree with formative research in terms of the way that the learning process starts, which is with the statement of a problem from the real context, the competences that students develop during the process and the way that knowledge is not given but built.

Praxeological Pedagogy

Praxeological pedagogy is the educative model that guides the institution in which research is carried out. Juliao (2014) explains that praxeological pedagogy comes from the necessity of locating pedagogy in a more specific place in the educative field, and it mainly considers an essential difference between practice and praxis. Practice has to do with following some rules or a model to develop a skill that may become a mechanical exercise; praxis refers to the reflection about what is done, including the forms of the subject who does the reflective process, from which the practice may be changed and transformed. This means that there is an essential difference in praxeological pedagogy in terms of the role of the subject according to the process realized because there is a reflective process in which the participants have an important role because they contribute from their reflection about their own practice.

On the other hand, this pedagogy is a disciplinary and professional field where students and teachers' knowledge and experiences converge to reflect, think, transform and give a new sense to the reality inside and outside the classroom, where the participants are active subjects (Juliao, 2011). This agrees with the view of knowledge proposed by formative research in which knowledge is a construction of teachers and students working together. One of the most important characteristics of praxeological pedagogy is the reflection of participants involved in the educative process. According to Durkheim (as cited in Juliao, 2014), reflective thinking considers two stages: a perplexity and doubt stage that gives origin to a thought and a search or inquiry to dispel the doubt. Thus, reflection may be understood as a mental act, as social praxis and as a critical view of the reality in which we are and with which we interact. This perspective is interested in the curiosity and motivation to guide the observation and reflection processes which lead to real inquiry by the learner (Juliao, 2014).

With respect to the application of praxeological pedagogy in the learning and teaching processes, the praxeological approach has four

stages: to see, as an explorative and analytical phase to answer what happens; to judge, as an action phase to answer what may be done; to act, as a phase to answer what to do specifically; and creative feedback as a phase of reflection in the action to answer what was learned from what was done and where all the knowledge acquired is reflected (Juliao, 2011). These four stages coincide in terms of the competences that students develop in the research process: to identify and analyze a problematic situation, to think about what may be done to solve that situation and to reflect about the process.

Methodology

Research Design

This study is a qualitative research due to its emphasis on exploring a problem and developing a detailed understanding of a central phenomenon (Creswell, 2002), which is the articulation of formative research with the classroom projects. Johnson (2008) affirms that in this type of research the most important aspect is the qualitative data collection and the objective exploration of reality. This is seen in this project from two different activities: the revision of the institutional documents in which the perspective of the research inside the university is presented, and the exploration of students and teachers' perceptions about the role of classroom projects in the learning process.

With respect to the methodology, this project agreed with the six steps in the process of research suggested by Creswell (2002): 1) identification of the research problem which was taken from the real practices regarding to the classroom projects; 2) reviewing of the literature, which was done by reviewing the institutional documents; 3) specifying a purpose and research questions, which was the articulation of formative research with the classroom projects; 4) collecting data, which was done by the document revision, questionnaires and interviews; 5) analyzing and interpreting data, the data collected from a priory approach; and 6) reporting and evaluating the research. In this frame, this research project corresponds to an action research approach due to its main purpose of improving the practice of education, with researchers studying their own problems or issues in a school or educational setting (Creswell, 2002), in this case, the necessity of the institution to articulate formative research with the academic activities.

Context and Participants

This project was carried out in a higher education institution in the undergraduate English Language Teaching program, in the Anglophone Language and Culture course, in which students develop the four language skills and learn how to communicate in the context of their own reality. The participants were 88 students from the six levels of the course, three students from a research course, six students from the final semesters, and six teachers from the program.

Data Collection Instruments

The instruments used for this project were documents, questionnaires and interviews.

The documents analyzed were the methodological guides for classroom projects, which are a kind of syllabus in which teachers explain the guidelines for the development of classroom projects. These were used since they are a ready-made source of data accessible to the investigator (Merriam, 1998). The second instrument used was a questionnaire administered in order to find out students' perceptions about the classroom projects. This agrees with Wallace's (2006) proposal in which questionnaires are used to obtain information about the feelings, thoughts, perceptions and beliefs of the participants. The third instrument used were semi-structured interviews administered to students and teachers "in order to tap into the knowledge, opinions, ideas and experiences" (Wallace, 2006, p. 124), in this specific case, the experience with the projects in the classroom. The questions for the questionnaire and the interviews considered items such as the topics of the projects and their relation with real life, the relation with different fields of knowledge, the contribution of the projects to students' pedagogical practice, competences, and the relation between process and product.

Data Analysis and Interpretation

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The analysis for this study was done from an *a priori* approach that, according to Freeman (1998), starts from some pre-existing categories before the analysis, which in this project was done by taking patterns from the institutional documents, and the theory about formative research, projects and praxeological pedagogy. Afterwards, these patterns became the pre-established categories used to analyze the data. These categories were the basis for the analysis, which sought out instances of these in the data (Freeman, 1998).

Posing a question from the critical reflection of reality. Regarding this category, the methodological guides showed that there is a topic for the project, such as traditions in some countries, but not an analysis of the reality to make a question. The students expressed that there is a distance between the topics of the projects and their own reality, or at least with problems related to their field of study:

We started the Project from a context which is not connected with us, we did not go deep, it was only a sketch of the topic. I think there should be deepening to make changes in our reality. (Student from the final semester)³

Here it is possible to demonstrate that the contents are more focused on the description and search of information, but there is a lack of reflection about the reality or problems related to the culture in the foreign language learning process; this happens because the topics are related to traditions in English-speaking countries, historical events, food or important dates, which is far from students' realities, as expressed by one of the participants. In addition, the students and teachers expressed that some projects start from a question, but that is not necessarily problematic and it does not promote transformation in the real context.

Appropriateness of the topics and relation with other fields of knowledge. The students and teachers agreed that the topics are appropriate for the projects in terms of the foreign language learning process, but that there is not a direct relation with other fields of knowledge. Nevertheless, from the students' perceptions it was possible to see that they recognize the rich field of culture and that this is a phenomenon which goes beyond the simple linguistic code. Still, they do not see the relation to other areas. The teachers also reported that there is no relation to different fields of knowledge despite of the richness that the cultural topic implies.

Objectives to answer a question. The current project guides contain both pedagogical and research objectives. It was possible to see some steps such as exploration, deepening, socialization and discussion – very close to the praxeological stages— to be developed during the process. However, there is not a clear difference in pedagogical and research terms. The objectives are to describe, create, compare, evaluate, and learn, but they are not specific about the pedagogical or research process in terms of the initial question. The students expressed that

Original Spanish: Estábamos empezando el proyecto por un contexto que digamos no se acomodaba a nosotros, nosotros no profundizábamos sino que mirábamos era todo por encimita. Habría sido mejor profundizar para poder hacer digamos cambios en nuestra realidad.

the objectives of the projects are not very clear for them, but they are aware that they must follow some stages to accomplish the final product. Although teachers say they are clear about what to do with the projects in the class, students are not aware they are following a process.

Competences to be developed. From the analysis of the methodological documents, it was possible to see how the current projects are focused on the pedagogical competences related to the process of learning a foreign language, but there is a lack in terms of research competences. The guides talk about linguistic, communicative, intercultural and technological competences, but there are no research competences mentioned.

On the other hand, most of the students said that the classroom projects develop different competences, but specially linguistic and communicative. Nevertheless, it is evident for them that competences related to research are omitted, as one of the students expressed:

It is important for students to have the chance of developing competences such as how to do a methodological table or a theoretical framework, if this is fostered in the culture and language class it is good because that makes the thesis project easier and that students do not have problems with that. (Student from final semester)⁴

For the teachers, the projects may help develop research, argumentative and critical thinking skills and competences. Nevertheless, the problem statement and initial question are essential to develop these competences as it was evidenced in one of the teacher's opinions.

I think it is important to work the critical thinking and reflection of some aspects, we need researchable realities in which a question is possible to be made, to search and synthetize information. (Teacher from the undergraduate program)⁵

Teachers recognize that the classroom projects allow students to develop different pedagogical and research competences and we shall take advantage of this.

Es importante que los estudiantes que tengan la oportunidad de desarrollar esas competencias de digamos de cómo saber hacer un cuadro metodológico, o saber cómo hace un marco teórico, si eso se fomenta desde las clases de cultura anglófona yo creo que sería bueno para que sea más fácil para los estudiantes y que no tengan problemas a futuro.

⁵ Yo creo que sería importante trabajar el pensamiento crítico de algunos temas necesitamos realidades investigativas en la que podamos plantear una pregunta, que podamos buscar fuentes de información, que podamos sintetizar información.

Answer to a question and a proposal to the problem. The guides show questions about specific topics related to culture, but the necessity or process to answer the questions is not explicit, which means that the process in research terms does not exist. Nevertheless, the students expressed in the questionnaire that the questions do not require a direct answer to a real problem. Although the main final product is clear, this is a remarkable aspect since it is possible to interpret that the most important thing for them is to have a final product, not to answer the question or propose an alternative or solution to a problem. As one of the students expressed:

I think the topics as they are being worked do not have a lot of impact because when we talk about a festival we are only giving information, actually, we are not going further than the topic... it was not something to be transformed, to make social or personal changes. (Student from the research course)⁶

In the teachers' perception, there is a question in some projects, but there is no real research process required to answer the question. In this sense, the projects do not reach an interpretation process, which is where students use their real knowledge and point of view, which is the final stage in the research process.

Process and product relation. From the analysis of the guides, the projects include final products such as videos, oral presentations, plays, posters, etc., but there is no relation with the process, or with a research product. In this respect, the students expressed that the relation between process and product along the projects is superficial, and there is a stronger emphasis on the product rather than on the process; thus, the main task is to make a video or a poster than to show results and interpretation.

The way in how the projects are presented does not have a relation the stages of the projects and its final product, most of the times we do not understand the reason for the final product and either the stages that take us to the final product. (Student from the research course)⁷

In terms of time, teachers consider that there is limited time to monitor students' work; additionally, they mention that there is no clear

⁶ Yo pienso que los temas que se están trabajando no tienen impacto porque cuando hablamos de un tema solo buscamos la información pero no estamos yendo más allá en el tema... no es nada para que transformemos, para hacer cambios personales o sociales.

⁷ La manera como se presentan los proyectos no establecen una relación entre las fases y el producto, muchas veces no entendemos él porque del proyecto y no entendemos esas fases que nos van llevando como en un escalón hasta el producto final.

methodology to work on the projects and join the students with the process:

The process should be standardized to know what must be done in each stage, a first stage that is started from the first week and it is also important to take the time into consideration. (Teacher from the bachelor program)⁸

In addition, the final product is coherent with the topic but this does not show the process followed by the students. The evaluation is centered on the product and not on the building process done by the students.

Contribution to the students' pedagogical practices. According to the data analysis, the guides do not mention this aspect explicitly, and for students this is not very clear either; even so, they said that the projects help them in different aspects such as in linguistic and the communicative competences:

I think the topics should be joined by the pedagogical aspect... and also the reflective part should be related to the pedagogical one, how that may be taught, how to do students see that topic" (Student from the research course)⁹

For the teachers, this contribution is not evident, but they have noticed that the projects foster linguistic competence when students are exposed to information other than class content:

The projects contribute to the students' communicative competence when they have to present, they must think about how to produce a message, how to set an oral presentation, how to structure visual material, all this helps their professional development'¹⁰

According to the previous opinion, students develop cognitive skills in terms of the selection of information, and increase their didactic knowledge and performance.

⁸ Hay que por lo menos estandarizar el proceso, saber que hay que hacer en cada etapa una etapa clara que uno comienza a seguir desde la primera semana y me parce que también hay que mirar el tema de considerar las limitaciones de tiempo.

⁹ Yo pienso que acompañado con los temas debería ir ahí a la par aplicado lo pedagógico... y también en la parte de la reflexión de que el tema debería ir pegado a la pedagogía, a cómo enseñarlo, como hacer que sus estudiantes vean esto.

Yo considero que aporta a las competencias comunicativas de los, es decir cuando tienen que hacer la presentación de su proyecto ellos por lo menos tiene que desarrollar como emitir un mensaje, como estructurar la presentación oral, como estructurar por ejemplo el material visual, entonces todo esto aporta a su desarrollo profesional.

Results

The main objective of this paper that was to show results from the revision of the project guides, and to know students and teachers' perceptions about the classroom projects. Based on the findings in the previous section, it is possible to say that the classroom projects do not start with a question based on critical reflection of reality. This was demonstrated in two ways. First, the methodological guides showed that the starting point is a general topic mainly related to English-speaking countries. Second, the students evidenced in their opinions that they do not find a connection with their own reality. Similarly, the topic is not worked on deeply nor critically because, as students expressed, the context of the topic is not connected with them, and it does not produce changes in their own reality. Third, students and teachers consider the topics of the projects as accurate according to the language learning process although the inclusion of different fields of knowledge is not explicit.

On the other hand, the methodological guides do not show a difference between pedagogical, learning and research objectives. Objectives corresponding to praxeological pedagogy are more focused on the pedagogical issue. Similarly, for students and teachers, there is no difference between research and pedagogical objectives in the projects. They considered that they are more concerned with the foreign language competences; nevertheless, both are aware they are following some stages to reach a final product. Similarly, the methodological guides showed an emphasis on linguistic and learning competences. This aspect is supported by the students and teachers' opinions in which they recognize that the linguistic and the communicative competences in foreign language improved highly through the projects; however, they felt the projects should be used to foster research competences as well. These competences would allow for the development of argumentation, synthesis, critical thinking, as well as different methodological processes connected to the research process.

Regarding the answer of an initial question and a proposal to a problem by the students, the methodological guides do not show a process to be followed to accomplish this even though they consider some learning objectives and competences. According to the students' opinions, although there is a final product, there is not an answer to a question and they do not propose an alternative to solve a problem; for them this happens because they only give information about the topic. They do not make an analysis; as a consequence, it is not possible to give a solution to a problem or create personal or social changes. For the teachers, since there is no clear answer for a problematic question, the interpretation process in which the students use their real knowledge and point of view is wasted.

The analysis of methodological guides showed that the products of the projects are not part of a research process. According to the students' perceptions, the projects are more focused on the product than in the process and the relation between these two aspects is superficial and unclear, they do not understand the reason of the final product regarding the process. For teachers, the main problem with this issue is the time, which is not enough to follow the whole process, and the lack of a clear methodology to follow clear steps to make the relation between the process and the product closer and coherent.

Finally, in terms of contribution of the classroom projects to students' pedagogical practices, both students and teachers consider the projects very valuable to improve communicative and linguistic competence, which are the bases of their future teaching practice as English teachers. Nevertheless, for the students particularly, the inclusion of the pedagogical aspect is important. For the teachers, the didactic and cognitive competences that students develop by doing the classroom projects is a valuable aspect because they are also important for their pedagogical knowledge and practice.

Conclusions

In terms of the articulation of formative research and classroom projects, the theory, findings and results suggest that the starting point to accomplish this articulation is the critical view of reality in order to make a problematic question. This aspect is coherent with Cerdá (2007) and Juliao (2014), who argue that the research and learning process should begin with the inquiry and critical view of reality in order to have students make a question about their real context. For this, the context and the problem may be close to the students' realities, in contrast to what students expressed about what happen with the topics with which they are currently working. Ramírez (2007) remarks that work centered on topics and not on problems reduces the students' discursive production since these topics are a small representation of a given reality. This makes the process of interpretation and critical thinking difficult as the starting point is a general topic, usually with no contextualization.

Since the process and projects should start with a problem and a question, there should also be clear research and pedagogical objectives in order to answer that question. Both kinds of objectives are possible because, according to Cerdá (2007), research and pedagogical exercises are not totally different, and can be developed to reach the same objective. These objectives must be shared by teachers and students, and González (2009) affirms that there should be a clear plan and objectives

for teachers and students to work together; these objectives should transcend the simple stages, as currently happens in the classroom projects in the program. Those objectives must correspond to the process to be developed. Similarly, research and pedagogical objectives should agree with the competences in the same process. Currently, it is agreed that there are some basic and general competences appropriate to develop cognitive activities, and useful for research and for pedagogy (Cerdá, 2007).

On the other hand, Cerdá (2007) points out that a research process starts with a question about the reality. Juliao (2011) also states that the pedagogical process starts by reflecting about reality to do an inquiry about it. This principle also means that the research and pedagogical processes finish with the answer to that initial question, by students proposing a solution to the problem or giving an alternative. This implies a process of interpretation, analysis and contribution from students' perspectives, which is an aspect that is missing in the current projects, according to what teachers expressed.

Following this, another remarkable aspect to connect formative research with classroom projects is to make the process-product relation logical. In Stoller's (1997) view, the sixth step in classroom projects is to present the final product, but there should be coherence between the process and the product. This starts by proposing a research product that reflects the process followed and the objectives of the projects finally accomplished. Anzola (2005) suggests the following as products from formative research: theoretical essays, case studies, problem based learning tasks, cross curricular projects and problem cores. Products such as videos or posters are also possible, but as a summary of the ones mentioned by Anzola (2005), not as the main final product.

Finally, regarding the contribution to students' pedagogical practices, the inclusion of formative research in higher education contributes to the preparation of future professionals, especially future teachers (Cerdá, 2007). This means that at the moment of doing research, future teachers develop pedagogical and didactic knowledge and understand their practice beyond the classrooms. In addition, Restrepo (2003) affirms that creativity and innovation play a very important role in formative research, which is also important for teaching. This way, formative research and classroom projects provide possibility to promote learning and research in the classroom by making students think about reality, inquire about it, and find answers to contribute to change in their real lives as teachers and actors in society.

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