

**Teachers' understanding of peace and citizenship
education and ways of integrating data literacy in
Colombia's *Cátedra de la Paz***

**by
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Abstract

Following the end of a long-lasting armed conflict, Colombia created a peace and citizenship education course called *Cátedra de la Paz*, looking to promote a culture of peace in all schools in the country. However, teachers' views about, practices in and responses to challenges of implementing the course remain unknown, as well as how they integrate data into their teaching practices. This study is focused on secondary school teachers' understanding of *Cátedra de la Paz*, their instructional approaches and their views of the role of data in the course. To achieve this, 45 teachers participated in an online survey, from which 10 were selected for an interview. Findings show that teachers have complex views of the course, face several challenges to implement it and have a limited vision of data integration. These results highlight the need to provide context-oriented support that consider teachers way of understanding the course.

Keywords: Colombia; Peace and Citizenship Education; Data Literacy; Teacher Beliefs; Teacher Practical Knowledge

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Chapter 1. Introduction

For a long time, Colombia has not been able to detach itself from violence. Starting from the Colombian independence in 1819, the country has faced many conflicts that had led to inequality, poverty and injustice (Velásquez, Jaramillo, Mesa, & Ferráns, 2017) . The longest armed conflict in the history of the country, which lasted 50 years, was the government's fight with the Revolutionary Armed Forces of Colombia guerrilla (FARC by its initials in Spanish) that ended in 2016. The talks that led to the peace accords created the opportunity to discuss the state of the country and put more pressure on the government to address the new reality of Colombian society by promoting citizenship and peace education.

This context led to the creation of *Cátedra de la Paz* (Chair of Peace, translated from Spanish) by Law 1732 of 2014, a mandatory peace and citizenship education course that aims to guarantee the creation and strengthening of a culture of peace in all national schools in Colombia (Ministerio de Educación Nacional, 2015b). This course is the result of the Colombian government's commitment to promote conditions to rethink the role of peace and citizenship in society and to support schools in fostering innovative ways of thinking and develop conflict-free learning environments (Bermeo & García, 2016).

Peace education, in the Colombian context, is defined in relation to the knowledge and skills necessary to develop active and engaged citizenship (Velásquez et al., 2017), which represents the expected outcome of the course (Ministerio de Educación Nacional, 2015b). The course is mandatory for all schools (both public and private) at all grade levels. While it is required to be at least one hour per week, *Cátedra*

de la Paz can be integrated with other courses such as social sciences, art or languages.

Since its creation, *Cátedra de la Paz* has been supported by guiding documents that focus on projects to be implemented in different grades. However, following the tradition of the Colombian educational model, it has left room for schools and teachers to decide the way they implement the course (Patti & Espinosa, 2007). The main benefit of this fairly open-ended approach is that it affords teachers and schools with the possibility to develop context-oriented curricula and to implement it based on the needs of the community. However, it also presents challenges to teachers, who have to select relevant topics, mobilize resources and assess students' learning. This study addresses two specific issues related to *Cátedra de la Paz*: teachers' understanding and implementation of the course and teachers' use of data.

The first issue is that there is little information about what is happening inside the schools in relation to *Cátedra de la Paz* and how the teachers address the selection of relevant resources or pedagogical approaches. Teachers' views, opinions and beliefs about what *Cátedra de la Paz* is and how it should be implemented have not been studied recently to the knowledge of this researcher. To understand these teachers' views and opinions is important because they are factors that could promote the transformation of learning environments (Pajares, 1992) or act as a barrier for its improvement (Ertmer, 1999). It is essential to know teachers' beliefs and practical knowledge because they play a role when deciding what topics will be covered, how they are framed, what instructional strategies will be used or what goals are set for the instruction.

A second issue is that *Cátedra de la Paz* needs to promote data-informed arguments when teachers and students discuss issues related to the course. Being able to think critically and learn with data is an essential competence in the contemporary society, where our personal identity, the way we engage with our community and our role in society are increasingly defined by data (Deahl, 2014). This is particularly important in a country like Colombia, where it is necessary to build constructive dialogue among the different actors of society around topics such as conflict resolution and history of the peace agreements, among others. In this sense, data literacy, defined as the ability to access, critically assess and ethically use data (Gebre, 2018) is very relevant in today's society, where the lack of public understanding of data has left citizens ill-equipped to understand and participate in democratic processes that affect them (Shreiner, 2017). These new literacy skills cannot be ignored in a course that is aimed at teaching students how to be citizens in the 21st century. Promoting data literacy among students can enable them to better engage and understand the current complex social and political context (Deahl, 2014), making them more suited for the Colombian and global society.

Accordingly, this study answers the following research questions:

1. What is the public secondary school teachers' understanding of *Cátedra de la Paz* and its relevance for their students?
2. What instructional approaches do public school teachers use to enact their vision of the course *Cátedra de la Paz*?
3. How do teachers view the role of data in implementing *Cátedra de la Paz*?

4. What challenges do teachers encounter in teaching *Cátedra de la Paz* with data?

This study follows a qualitative survey approach and a follow up interview with selected teachers. This study aims to provide information about teachers' understanding of *Cátedra de la Paz* that could lead to improvements in the way the course is implemented. It also explores how *Cátedra de la Paz* is being taught by the teachers including their instructional approaches and decision-making processes. Another purpose of the study is to understand the challenges teachers encounter when teaching the course with the purpose of providing better guidelines and support for its implementation. Finally, this study aims to explore the relationship between data literacy and peace/citizenship education, looking at teachers' view of the role of data in this course, the types of data they use and the challenges they find while using it, in order to better support the integration of data in teachers' practices.

Chapter 2. Literature review

2.1. Peace and citizenship education in Colombia

The armed conflict between the government and the FARC guerilla ended in 2016 when the two main actors signed a peace agreement known as 'The Havana Accord' (Presidencia de la República Colombia & FARC-EP, 2016). It is hard to locate the origin of the conflict since it can be traced to both internal causes, such as the armed conflict between political parties and distribution of the land, and external conditions, such as the Cold War (Melamed & Pérez Espitia, 2017). The nature and extent of the conflict changed over time, including agrarian redistribution, drug-trafficking, political participation, international pressures, institutional fragmentation and mistrust (Historical Memory Group, 2016).

The conflict ended when Colombian president Juan Manuel Santos declared a peace agreement with the guerrilla FARC after 4 years of talks in Havana, Cuba. The implementation of these accords has faced many challenges since the beginning of the peace talks caused by the non-fulfilment of obligations, both by the government and the guerrilla group (Loris & Loris, 2018). Following the data collected by the Historical Memory Group (2016), the conflict left approximately 220,000 deaths (81.5% civilians and 18.5% combatants), 25,007 missing persons, 1,754 victims of sexual violence, 6,421 children and adolescents recruited by armed groups, and 4,744,046 displaced persons. These numbers refer only of the direct victims, while it affected the life of Colombians in many other ways.

The peace talks, which started in 2012 and that eventually led to the end of the conflict, demonstrated the need to discuss human rights in the country, promote the peaceful resolution of conflicts and recognize the importance of diversity and plurality.

This led to the creation of the peace and citizenship course, *Cátedra de la Paz*, as part of the conflict resolution and reconciliation process (Ministerio de Educación Nacional, 2015b). *Cátedra de la Paz* is a mandatory course that seeks to strengthen the culture of peace in all Colombian schools, recognizing them as active parts of the conflict and of the possible solution to build new views on history, memory and reconciliation in the country (Torres Gámez, 2016).

2.1.1. Citizenship Competencies Program

Cátedra de la Paz, however, is not the first national effort to promote citizenship and peace education in the country. Since 2003 the National Ministry of Education has led an ambitious program of citizenship competencies, focused not only on “civic knowledge —knowledge about concepts such as law, democracy, the constitution, legal system — but also the other elements that influence citizenship behavior” (Velásquez et al., 2017, p. 69). This initiative is called Citizenship Competencies Program, and it involves the definition of standards, the creation of an evaluation system, the dissemination of good practices, the support to local entities and the promotion of teacher training programs (Velásquez et al., 2017).

The Citizenship Competencies Program is organized in standards that include different dimensions. Standards in this program are defined as the clear and public criteria that establish the basic levels of quality that are pursued, and include three dimensions: 1) living together and in peace, defined as the ability to understand the basic values of civic coexistence and to establish good social relationships; 2) participation and democratic responsibility, defined as the ability to participate in the construction of basic agreements in their contexts and to exercise their citizenship; and 3) plurality, identity, and value of differences, defined as the ability to recognize all

humans beings with equal dignity (Ministerio de Educación Nacional, 2003; Velásquez et al., 2017).

The standards described in the program recognize a set of competencies that are transversal to the dimensions, and that are defined as the ability to *know* and *know how to do*. This imply not only 'collecting' knowledge, but applying it in different contexts, looking to teach students how to act responsibly in a democratic society. With this, the citizenship competency is defined by five elements: 1) knowledge, so the students will know about the nature of citizenship; 2) cognitive competencies, so students can apply different mental processes; 3) emotional competencies, so students can identify and respond to their own emotions and those of others; 4) communicative competencies, so students can establish constructive dialogue with others; and 5) integrative competencies, so they can articulate all the previous competencies (Ministerio de Educación Nacional, 2003). Initiatives like the Citizenship Competencies Program are important because they seek to break the cycle of violence, which could not be achieved only by political peace processes (Patti & Espinosa, 2007).

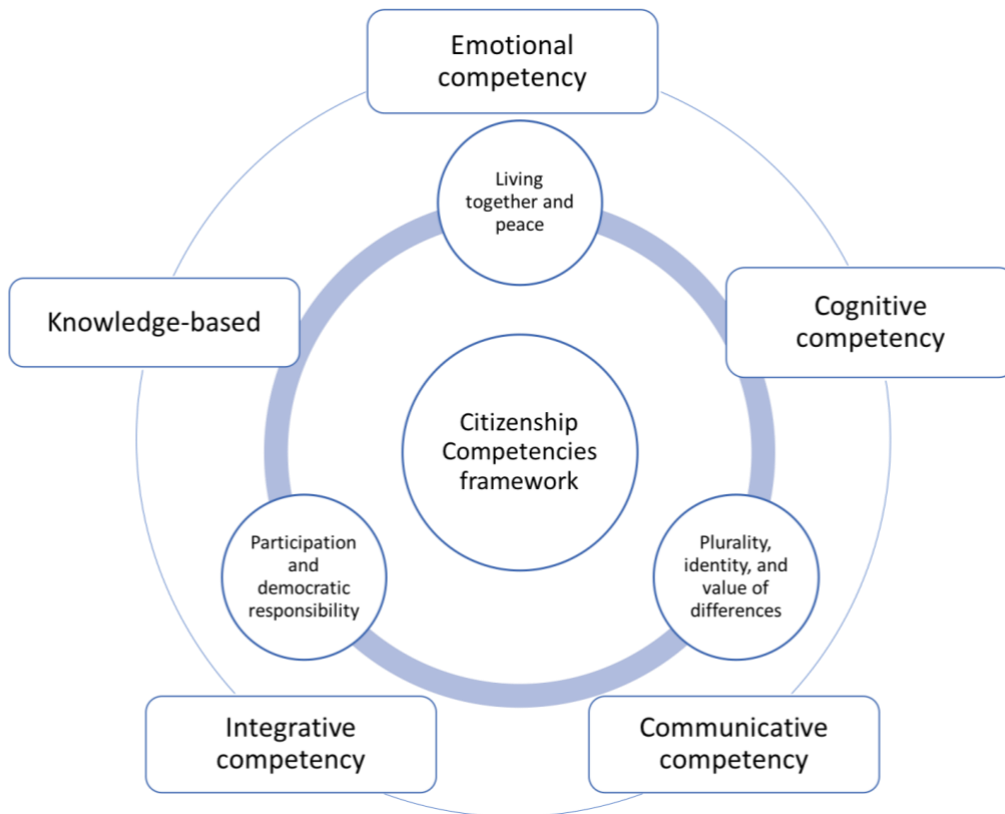


Figure 2.1. Citizenship competencies framework

The program also contains an evaluation component with the goal of identifying whether the students are learning in school the minimum knowledge, skills, and attitudes they need to become competent citizens in a democratic society (Diazgranados & Noonan, 2015). This evaluation is organized by the *Instituto Colombiano para el Fomento de la Educación Superior* (ICFES), and has been implemented in different grades, including when students obtain their high school degree and when students complete their undergraduate program. The objective of this national institution is to guide the design of public policies of the government, looking to respond as best as possible to the students capabilities and needs (ICFES, 2018).

Inside the Citizenship Competencies Program there have been different interventions that have been references for *Cátedra de la Paz*. For example, the project *Aulas en Paz* (Classrooms in Peace, translated from Spanish) involved students from

second to fifth grade in 24 lessons that promote discussions about aggression, conflicts and bullying. After the implementation of the program, researchers found that the students showed fewer levels of aggression with less frequent violent actions (Chaux, 2007). Other similar projects, as described by Giraldo et al (2015), are the *Cátedra UNESCO*, that promoted reflections, studies and activities around the culture of peace; and *Cátedra Guillermo Gaviria*, that explored pedagogical foundations for the promotion and consolidation of the culture of peace and nonviolence. Many other initiatives were developed locally and tried to address and advance a pedagogy of peace in schools.

The implementation of these Citizenship Competencies Program interventions left some learned lessons from its successes and challenges. These learned lessons provide elements to improve the implementation of *Cátedra de la Paz* such as the need to create an initial awareness-building campaign with the educational community by doing workshops and communicational strategies, the need to promote the recognition and support of significant experiences by providing technical and financial resources, to create pilot studies, to publish resources that support the implementation, to incorporate other sectors to the process, and to implement the projects thinking in long-term goals, which could promote sustainable interventions (Patti & Espinosa, 2007; Velásquez et al., 2017).

On the other hand, some of the challenges found on the previous interventions have been the adaptation to the different contexts in the different schools, not providing enough previous training before the implementation, frequent changes in the policies, lack of school's accountability due to the autonomy of the implementation, lack of an integral evaluation model, and resistance and opposition inside and outside the schools due to polarization in the country (Patti & Espinosa, 2007; Velásquez et al., 2017).

These previously encountered challenges are important for the design, implementation

and assessment of *Cátedra de la Paz*, and brought together universities, schools, NGOs, government institutions and others to build the structure of the course (Díaz, Díaz, Marroquín, & Rincón, 2016).

2.1.2. Structure of *Cátedra de la Paz*

Cátedra de la Paz was created in the context of the peace talks between the Colombian government and the guerrilla FARC that started in 2012 and ended in 2016. The course is organized under the three dimensions and the five competencies described in the Citizenship Competencies Program (Ministerio de Educación Nacional, 2015b). This explains why, being a course dedicated to the promotion of a peace culture, *Cátedra de la Paz* is framed under citizenship competencies. Moreover, peace and citizenship education share common aims, engage in shared domains and are interested in the issue of criticality (Bevington, Kurian, & Cremin, 2019).

Following this common ground, the course seeks the formation of citizens that are peacefully related to each other, that participate actively and through peaceful and democratic means, that contribute to strengthening of democracy and law, that value and respect differences, that build a historical memory and that are related in a careful and responsible way with animals and the environment (Ministerio de Educación Nacional, 2015b, p. 8). From this view, peace is defined not only as an antonym of war; rather, it is from a holistic perspective, promoting human wellbeing (Cárdenas Romero, 2017). This view encompasses the involvement of the society, looking for nonviolence as a universal strategy that contributes to the resolution of the conflicts (Buitrago & Vergara Gómez, 2015).

Cátedra de la Paz is organized in 6 categories that include 13 topics. Schools and teachers, following the law, should choose at least two of the topics to integrate in

their classrooms, and its implementation has been mandatory after December 2015

(Ministerio de Educación Nacional, 2015a):

Table 2.1 Proposed categories and topics of Cátedra de la Paz. Adapted from Ministerio de Educación Nacional (2015b)

Categories	Definition	Topics
Peaceful coexistence	Focuses on the promotion of constructive, inclusive, careful relationships, without aggression, or discrimination or mistreatment	Peaceful resolution of conflicts Prevention of bullying
Citizen participation	Focuses on increasing opportunities to exercise active citizenship for students	Political participation Projects with social impact
Diversity and identity	Focused on teaching students to recognize their own identities, identify ways to express them, and recognize and value the identities of others	Diversity and plurality Protection of the Nation's cultural riches
Historical memory and reconciliation	Seeks the development of empathy, to better understand the situation of those who may have suffered in the past	Historical memory History of national and international peace agreements
Sustainable development	Seeks to promote the understanding that human beings and the natural environment can be more consistent with ethical principles and care	Sustainable use of natural resources Protection of the natural riches of the Nation
Ethics, care and decisions	Seeks to prepare students to make informed, responsible, careful and ethical decisions	Justice and Human Rights Moral dilemmas Life projects and risk prevention

These topics are the result of mixing the lessons learned from the Citizenship Competencies Program and specific requirements of the law. They are not, however, strict instructions for schools when planning the implementation of the course, but guidelines for teachers and administrators to decide the topics that they see more fit to their context. This gives them the possibility to decide the way they will discuss and address the topics, trying to follow a bottom-up structure in the implementation of *Cátedra de la Paz* (Álvarez & Marrugo Padilla, 2016; Díaz et al., 2016; Velásquez et al., 2017). As a consequence, although there are materials that support its implementation (e.g. Ministerio de Educación Nacional, 2015; Santillana & Javeriana, 2016), there are different applications of the course in most of the schools, since Colombia's national policy is based on the premise that schools should have the internal capacity to develop and evaluate their own curriculum and teaching practices (Patti & Espinosa, 2007).

Therefore, teachers do not have structured guidelines that outline a step-by-step plan to implement *Cátedra de la Paz*, but a main goal that should be achieved by its application. This goal is defined by the Ministry of National Education (2015b) as to generate reflection and dialogue on sustainable development in the students, while promoting a culture of peace and the improvement of the quality of life of the population. Supporting this perspective, Tibbitts and Torney-Purta (1999) say that that there should not be a single and static model for citizenship education, but one that is able to adapt to every context.

There have not been many studies that have analyzed the implementation of *Cátedra de la Paz* focusing on teachers' views and perceptions. Moreover, most of the publications traced by the author of this study are the result of masters' theses in Colombian universities, and with information about the early stage of implementation of the course. For example, Diaz and colleagues (2016) discussed the initial stage of *Cátedra de la Paz*, where they found that teachers were not clear about what to do in it, and that a critical perspective around peace and citizenship was necessary. Duarte Leyton (2018) studied the impact of the course in two schools in Bogota where he found through interviews that students did not have clarity of what *Cátedra de la Paz* was, due to problems in its implementation. Bermeo and Garcia (2016) explored five educational experiences in schools that use art as a common tool to explore the topics in *Cátedra de la Paz*.

On the other hand, some authors have published theoretical discussions and reflections around *Cátedra de la Paz*. In these studies, authors have discussed topics that should be addressed in *Cátedra de la Paz* (Giraldo et al., 2015), possible approaches to historical memory inside the course (Flórez Orellano & Valencia Ibarra, 2018; Torres Gámez, 2016), context of the creation of the course (Cárdenas Romero,

2017) and the possibility to integrate *Cátedra de la Paz* with different teaching practices and methodologies (Bravo Sánchez & Ruiz Gómez, 2017; Otálora Rodríguez, 2018). In this sense, current teachers' views, practices and responses to challenges in the course remain unknown, as well as how they integrate data into their teaching practices.

2.1.3. Citizenship education or civic education

The fact that *Cátedra de la Paz* is focused on citizenship education, and not civic education, draws attention to the possible differences of the two concepts. This happens because, even if some authors say that they could be used as synonyms (Tibbitts & Torney-Purta, 1999), other authors say that they should not be used interchangeably. In this sense, Kerr (1999) claims that civic education is largely content and knowledge-based, focused on topics such as history and geography, and the structure and processes of the government and its constitution. Alternatively, while citizenship education includes civic knowledge, it goes beyond this definition by inviting students to engage in investigation and interpretation of the content, looking not for the information by itself, but to promote their participation in society.

The difference between citizenship and civic education has implications for the way the course is implemented. This happens because, if *Cátedra de la Paz* is understood as a citizenship education course, it must include three dimensions: it should be education *about* citizenship, promoting knowledge and understanding of their society; it should be education *through* citizenship, involving the students in active participation in their communities; and it should be education *for* citizenship, integrating the previous two dimensions by giving learners the tools to participate and apply them in their lives (Kerr, 1999). Accordingly, the course should be able to make a positive contribution in

Colombia without leaving aside that the change in values and behaviours in citizenship depends on many different factors (Tibbitts & Torney-Purta, 1999).

2.1.4. Citizenship in the 21st century

As it was already mentioned, the Colombian Ministry of Education defines what it means to be a citizen in the Citizenship Competencies Program, by describing three standards (living together and in peace; participation and democratic responsibility; and plurality, identity, and value of differences) and a set of competences that students must strengthen in order to be able to practice their citizenship in Colombia (Ministerio de Educación Nacional, 2003). However, a global debate exists around whether this classic definition of citizenship is suitable for the challenges of society in the 21st century.

This debate means that citizenship education courses might not be doing enough to prepare students to face the challenges that society will present. Buckingham (2000) argues that students feel disengaged from politics and their role in society: they feel disempowered and that everything is done 'over their heads'. Therefore, being a citizen is not only about coexistence, democratic responsibility or plurality; it is also about empowerment and seeing themselves as active members of society. In this sense, schools play an important role, providing a space where they can master and develop these skills and competencies (Jenkins, Clinton, Purushotma, Robison, & Weigel, 2009).

This new set of skills and competencies, and the need to develop a new concept of citizenship from the schools, have been discussed by many organizations. For example, the Organisation for Economic Cooperation and Development (OECD), talks about the need not only to prepare young people for the always-changing work life, but to promote active, responsible and engaged citizens (OECD, 2018). This not only includes a new set of skills and competencies, but also a change to what it means to be

literate and how citizenship is practiced (Common Sense Media, 2009). Partnership for 21st Century Skills talks as well about how civic life is constantly changing, and being a citizen today is:

(...) more than understanding the roles of government and voting in elections. It means making sense of local, national, and global events, trends and information, and acting safely, responsibly and ethically in online forums. Citizenship requires a wide range of knowledge, 21st century skills and experiences for effective and productive participation in the democratic process, community life, education and workplaces. (Partnership for 21st Century Skills, 2014, p. 5)

And, while in the United States of America the discussion about the concept of citizenship in the 21st century has been led by the organization Partnership for 21st Century Skills, in Canada by the NGO called C21 (Bell, 2016), in Colombia there is not an organization that has led this discussion in a way that reflects meaningfully on public policies or school practices to the best knowledge of the author.

2.2. Data literacy and citizenship

We are surrounded by data; however it is still common to see confusion in the notion of what they are and its relevance and application in our society. There are multiple studies where the definition of data is discussed or metaphors are used to try to address the confusion (Borgman, 2015). In this sense, schools have not escaped the puzzlement. For example, as noted by Gebre (2018), students define data in terms of lab/school experiments, survey related information and numerical charts and graphs, showing a narrow view of a topic that broadly affects everybody's life in society. On the other hand, teachers often see data in terms of test scores, as a way to know more about students or as something to integrate to their lessons (Jimerson, 2014).

These variation of definitions show some of the challenges in developing data literacy in schools. Teachers and students could develop views of data beyond

experiments and surveys and raise awareness in other sources of data, preparing themselves to build stronger identities (online and offline). Moreover, data literacy could help them to interact with their closes communities while identifying and solving problems that respond to their contexts and understanding its society with the ammounts of data available, among many other things that are between the possibilities of the development of data literacy (Deahl, 2014; Selwyn, 2014).

However, in order to promote this critical literacy in the students, it is necessary first to understand how data is defined. Ercegovac (2015) defines data as recorded representations of a phenomenon, that could include properties, measurements and processes, among others, for the purposes of interpretation and communication. This is complemented by the definition provided by Mandinach and Gummer (2015), who see data as both qualitative or quantitative facts, figures, materials or results, that are empirical pieces of evidence, and that are transformed into information by context that gives them meaning. With this, they see the goal of data as to be actionable, since it provides information that should lead to action. In addition, Kitchin (2014) presents data as elements that are taken (e.g. observations, computations, etc.), but that are never pre-analytic, independent nor objective. All these different views show how wide the concept of data is, and how wide the range of skills to understand and use data can be. In this study, data is defined as texts that represent a phenomenon, cultural artifacts created by humans that are bound to a time and a place (Ercegovac, 2015; Loukissas, 2019).

Mandinach and Gummer (2013) argue that somebody is data literate when they understand and use data in order to inform decisions while being able to identify, collect, organize, analyze, summarize, and prioritize it. Other authors add the ability to ask questions and develop a hypothesis, while identifying problems that can be answered

using data in an ethical way (Calzada Prado & Marzal, 2013). There is, however, a confusion when defining the concept clearly since it is usually mixed with other terms such as statistical literacy, informational literacy, and numeracy, to only mention some. In this sense, Koltay (2015) argues that in order to define what being data literate is, it is necessary to find its purpose, which the author defined as the promotion of “critical thinking that keeps us away from the pitfalls of being overly optimistic or unduly pessimistic, behaving in an excessively critical or uncritical way” (p. 404). Under this definition, data literacy cannot be independent from critical thinking (Koltay, 2017; Schield, 2004).

Pangrazio and Selwyn (2018) argue that the variety of definitions of data literacy happen because of the different frameworks authors use. These authors frame their definition in the context of personal data, where they identified four forms or approaches: 1) data safety and management data, focused on the protection of personal data; 2) data science, focused on the user’s capability of working with big data (or other forms of complex data); 3) data hacking, focused on the capability of accessing and repurposing data; and 4) a media literacy approach to data, focused on the empowerment of citizens or on capability of understanding different representations of data. Pangrazio and Selwyn (2018) say that data literates should be aware of the implications of data use, promoting a space to reflect critically about its role in social, politic, economic and cultural settings.

Following the media literacy approach presented by Pangrazio and Selwyn (2018), there is an urge to move from a classic definition of data literacy to a comprehensive understanding of literacy in the age of data. This would bring together some literacies such as information literacy, scientific literacy, media literacy and others (Data-Pop Alliance and Internews, 2015). Under this framework, data literacy is defined

as the set of skills to engage with the society, using and talking about data, giving special importance to the way people dialogue with the community while mixing types of information. In this study, data literacy is understood as the ability to access, critically assess and ethically use data (Gebre, 2018).

2.2.1. How data literacy benefits citizenship

Data literacy is still an emergent field that is struggling to find a solid definition or a consolidated framework, which leads to different reasons as to why it should be promoted in schools and society. For the purpose of this study, the reasons are organized in three points that represent the main justification to promote data literacy: the relation of data and identity, the role of data in the interaction with communities and the need to empower students as citizens in a “datafied” society.

The first reason relates to the individual dimension of citizenship and how identity is being affected and represented by data. The growing role of personal data in society, where it is being collected on a daily basis and many times without the knowledge of the users, requires a critical view from the students in understanding the implications of this (Pangrazio & Selwyn, 2018). This trend is usually defined as ‘datafication’, and is centred around how social media act both as a stage for self-expression and ‘sites of struggle’ (McCosker, 2017). Another related issue is the increasing interest in the study of ‘digital footprints’, defined as the traces of a person’s online activity. These digital footprints have been largely discussed in academia, and state that students’ activities online have direct implications in their place as learners, citizens and future employees (Buchanan, 2018; Hengstler, 2011; Kuehn, 2012; Parkinson, Millard, O’Hara, & Giordano, 2018)

The second reason relates to the relation of the students with their communities and the necessity to understand their contexts and communicate with others using data. In this scenario data-based dialogue is needed, especially in the current situation of disinformation in Latin America (Paz Peña para la Alianza de Organizaciones Al Sur, 2019) and the overall datafication of dialogues in society (Tobias Schäfer & van Es, 2017). In this, it is both important that students access and understand data to have informed dialogues (Fontichiaro & Oehrli, 2016), and that students go beyond the mere access to the analysis to read their context, building appropriate images of the needs, advantages and problems of their community (Dankowski, 2018; Gunter, 2007).

Finally, the third reason to why it is necessary to promote data literacy relates to the empowerment of the citizens in relation to structures of power, with the need to promote an understanding and critical analysis of the decisions made by the government or different organizations. This critical stance would empower students as citizens by promoting a more proactive role in society, working with the public administration to develop flexible responses to issues that the community might face (Deahl, 2014). This criticality also seeks to develop informed and critical arguments about the use of data by government and corporations, especially related to what has been defined as 'dataveillance' -surveillance through online data-, that has profound consequences in the relation of the citizens and public or private organizations (van Dijck, 2014). One example of the importance of this reason is the birth of critical movements that seek the improvement of society through the incorporation of data, such as explorations between data and racism, feminism and social justice (e.g. Gutiérrez, 2018).

These three reasons call for a critical perspective on data literacy, understanding this as a call to look critically at data collection, use and analysis, as well as issues related to the power structures that are enabled by data-driven processes, such as

privacy concerns or surveillance. Hautea, Dasgupta and Hill (2017) describe five themes in their vision of a critical data literacy: 1) Data collection and retention has privacy implications, 2) Data analysis requires skepticism and interpretation, 3) Data can come with assumptions and hidden decisions, 4) Data-driven algorithms cause exclusion, and 5) Measuring and reporting on data can affect the system that created the data.

2.2.2. Instructional approaches to data literacy

There have been numerous interventions of data literacy in schools, although many of these address directly professional training for teachers that look to improve their capabilities to make data-based decision making (e.g. Bertrand & Marsh, 2015; Datnow & Hubbard, 2014; Marsh, Bertrand, & Huguet, 2015; Vanhoof & Schildkamp, 2014). However, it is possible to find studies that address different instructional approaches and teaching practices to promote and assess data literacy in students. Some of these studies are described next.

Hautea, Dasgupta, and Hill (2017) worked with students using a team project-based approach in the Scratch online community to analyze the users perspective of public data when programming, which showed that they developed critical data literacy, promoted by a familiar context for them in which discussion was encouraged. Another initiative is Thinking With Data project (Vahey et al., 2012), which focused on an interdisciplinary implementation for the promotion of data literacy in the K-12 curricula. The program was implemented in middle school grades and engaged students in two aspects of data literacy by using a problem-based approach: formulating and answering data-based questions and using appropriate data, tools, and representation. While the authors claim that there is a need to do a further analysis of the results, the evidence

showed improvement in mathematics and social science, as well as indications of improvement in science and language/arts.

Deahl (2014) presents two projects focused on building socially-embedded data literacy, based on two case studies. The first one is a festival of code for students where the researchers analyzed documentation, such as blog and tweets, videos of interviews and presentations in order to see how the festival supported data literacy. The author identified excitement in the use of data in the participants, as well as a better understanding of data and its potential and a desire to keep learning more. The participants displayed as well a relation between their data literacy and civic engagement, opting to develop their projects focused on issues of their communities. The second project is Local Lotto where students from New York city with low mathematics scores collected data about opinions on the lottery, analyzed data and synthesized their results in maps, showing others their findings. With this, students were engaged in data literacy activities, establishing dialogues using data after interpreting it. They showed as well an interest in their community and its issues, with the expectation that in the future they would be informed users of data, engaged in civic participation while engaged in critical thinking.

Another implementation was done by using real-world data and a project-based instructional design, where Erwin (2015) analyzed how teachers guided students in the analysis, interpretations and report of quantitative data, which resulted in an increasing task commitment and analytical thinking, and all this by integrating different courses and projects that helped to promote the disciplinary learning of students. Chin, Blair and Schwartz (2016) showed the creation of online games that work as an interactive assessment tool for the students abilities with data and visualization. These games, designed to be focused on the process of the students, resulted in improvement of how

they understood graphical principles and identified key messages in stories. Finally, Riddle, Beck and Morgan (2017) talk about the importance of case-based teaching in data literacy where it would allow them to work with authentic information, using resources such as maps or public datasets that would engage students in reflection by using reflective feedback.

These cases show not only the wide variation of instructional designs that have been related to interventions aiming to promote data literacy, such as project-based learning (Deahl, 2014; Hautea et al., 2017), gamification (Chin et al., 2016), case-based learning (Riddle et al., 2017) and problem-based learning (Erwin, 2015; Vahey et al., 2012). These cases also highlight the importance of promoting critical data literacy in the schools, since it results in a better understanding by the students of subject areas and the need to be critical when using or interpreting data, while increasing the engagement of the students in their communities and developing critical thinking about their civic role in society.

In the same sense, a critical data literacy intervention is not enough if it is not supported by a culture in the schools that promotes and encourages these teaching and learning practices. A data culture, as defined by Mandinach and Gummer (2015), is built upon collaborative inquiry where practitioners use and discuss data in a trusting environment, while having a strong support from leadership and resources. Gerzon (2015) adds that a data culture in schools is where it is used for teaching and learning as a way of reflecting and promoting discussion in a systemic way. She identified five elements that should be present in a data culture: 1) clear expectations on the use of data, that adapt to the different contexts in the schools; 2) make meaning of data, where data can be used to inform decisions; 3) access to data, organized in way that allows effective analysis; 4) knowledge and skills to use data, including strategies for analysis

and assessment; and 5) leadership that nurtures and support the use of data in the schools.

The role of data literacy in the promotion of citizenship competencies can only be achieved if all the actors in the community are empowered with “skills that can be applied to community problem solving and thereby enabling them to better understand, analyze, and participate in complex social and political issues” (Deahl, 2014, p. 46). In this sense, promoting these new literacies in the students must have as a purpose the promotion of: (1) democratic participation and active citizenship, (2) knowledge economy, competition, and choice, and (3) lifelong learning, cultural expression, and personal fulfillment (Livingstone, Couvering, & Thumim, 2008).

Chapter 3. Theoretical framework

Teachers' practices are bounded to "complex, practically-oriented, personalised, and context-sensitive networks of knowledge, thoughts, and beliefs" (Borg, 2003, p. 81). Because of this, It is necessary to think about these teachers' practical knowledge and beliefs (Van Driel, Beijaard, & Verloop, 2001) since they can act as a filters where teachers interpret or select new information and experiences that would guide their actions inside the classrooms (Meijer, Verloop, & van Driel, 2001), which could determine how an educational initiative such as *Cátedra de la Paz* is approached in schools.

Teachers' practical knowledge is hard to define, and the term is used to condense many different concepts, because "components of knowledge, beliefs, conceptions, and intuitions are inextricably intertwined" (Meijer et al., 2001, p. 446). Borg (2003) explains that this concept is usually mixed with terms such as pedagogical knowledge, theoretical beliefs, culture of teaching, pedagogical reasoning and personal theories, among others. Kate, Sandretto and Heath (2007) define teachers' practical knowledge (usually abbreviated as TPK) as the context-specific knowledge that teachers gather with practice, which includes their firsthand experience of students particularities. Five features have been identified as important in teachers' practical knowledge: it is action-oriented, individually and contextually bound, implicit and/or tacit, integrated with everyday knowledge and closely related to teachers' beliefs (Van Driel et al., 2001).

Beliefs play an important role in teachers' practical knowledge to the extent that some authors argue that teachers rely more on their beliefs than on their academic knowledge when they have to make instructional decisions, probably due to the rapid pace of changes that happen inside educational environments (Wallace & Kang, 2004).

Teachers' beliefs are defined as the systems that encompass "knowledge construction, learning, and teaching, or examination of these from a specific viewpoint" (Jääskelä, Häkkinen, & Rasku-Puttonen, 2017, p. 199), such as attitudes or values towards instructional strategies. They are, as stated by Pajares (1992), not easily affected by persuasion and are deeply personal.

The specific set of beliefs that focuses on how students acquire knowledge, or what are the pedagogical priorities, is known as pedagogical beliefs or conceptions, which are usually classified in two categories: knowledge transmission (teacher-centered) or knowledge construction (learner-centered) (Liu, 2011). These beliefs influences how teachers approach their teaching, how they implement their instructional strategies, and how learning environments are designed, being in some cases more important than institutional barriers (Bybee & Fuchs, 2009; Gebre, Saroyan, & Bracewell, 2014). Pajares (1992), based on Rokeach's research, defines three assumptions that can be made of teachers' beliefs: "Beliefs differ in intensity and power; beliefs vary along a central-peripheral dimension; and, the more central a belief, the more it will resist change" (1992, p. 318). When analyzing the behavior, attitudes and values of teachers, knowledge and beliefs cannot be easily separated, but the first one is more oriented towards personal values and ideologies, while teachers' practical knowledge is more oriented towards factual propositions (Meijer et al., 2001)

Teachers' practical knowledge and beliefs are important because they can act as influencing factors to the transformation of learning environments. In the context of technology implementation in schools, Ertmer (1999) identified two teacher-related barriers that can impede the use of technology in the classrooms: the first-order and second-order barriers. First-order barriers are those that are extrinsic to teachers, and include aspects such as access to resources, insufficient training or lack of support.

Such barriers are usually easy to measure and relatively easy to eliminate. Second-order barriers are those that are intrinsic to teachers and refer to teachers' beliefs and practical knowledge about teaching. These are harder to change because they are more personal and deeply engrained on the practitioners. Both of these barriers are important to this research, because "first-order barriers can be significant obstacles to achieving technology integration, yet the relative strength of second-order barriers may reduce or magnify their effects" (Ertmer, 1999, p.53). Windschitl (2002) provided a way to reframe these second-order barriers, describing them as dilemmas that can be either conceptual, pedagogical, cultural or political.

When talking about *Cátedra de la Paz*, beliefs and practical knowledge play a big role. They could not only determine the instructional approaches and strategies used in the classrooms but help to decide which topics will be covered in class (whether it is conflict resolution, history of the conflict or natural resources) and how they are framed. This puts in play not only pedagogical views, but also overall understanding of the country's situation that are usually harder to change and manifest, for its implicit and tacit nature (Pajares, 1992). Teachers' beliefs and practical knowledge are a necessary framework to analyze *Cátedra de la Paz*, because while it is already known what the leading organizations say about it (Ministerio de Educación Nacional, 2015b; Santillana & Javeriana, 2016), it is still mostly undiscussed what topics teachers think are more relevant, what are the goals that are worth achieving, how they expect to achieve them, how they view, find and talk about data, and how it can be used in school.

Chapter 4. Methodology

4.1. Research sites

In this study, data was collected from public school teachers in the department of Antioquia, Colombia, located in the central northwestern part of the country (a department in Colombia is a political subdivision similar to a province in Canada). *Cátedra de la Paz* is a mandatory course in public schools, which implies that all the institutions in the department are expected to apply the course, although practical implementation varies in relation to topics covered and the resources available for teachers and students. Teachers who participated in the research are from 19 public schools located in different municipalities in the Medellín metropolitan area. All the schools involved in the study are classified as urban.

4.2. Participants

The participants in the research are teachers from public schools who are working or have worked with projects related to *Cátedra de la Paz*, from grade 6 to grade 11. Accordingly, a purposeful sampling (Creswell, 2012) was used, where participants were selected based on their willingness to participate and the variation they provide to the study.

Forty-five teachers responded to the survey. Subsequently, 10 teachers were selected for face-to-face interviews, contacted by the email addresses provided in the web-based questionnaire. The 10 interviewed teachers belong to 6 different schools, located in 3 different municipalities. Table 4.1 presents background information about the interviewed teachers:

Table 4.1. Background of interviewed teachers

Code	Municipality	Years of experience	Grade levels they teach	Area
003	Medellín	8	9	Ethics
005	Medellín	4	6, 7 & 8	Social Sciences
006	Medellín	8	6	Social Sciences
009	Envigado	35	7	Economics and politics
010	Envigado	33	10	Social Sciences
012	Medellín	14	8, 9, 10 & 11	Ethics
016	Bello	15	6 and 7	Spanish
024	Medellín	11	7 and 9	Math and physics
026	Itagüí	24	6 and 7	Technology
028	Envigado	36	9	Social Sciences

4.3. Data collection

For this study, a cross-sectional survey design was used to determine current conceptualizations and practices of teachers regarding *Cátedra de la Paz* and their use of data in implementing the course. For this, two forms of data collection were used: a web-based survey and semi-structured interviews.

4.3.1. Web-based questionnaire

The web-based survey was developed on SFU's server using WebSurvey. The questionnaire contains both open-ended (such as 'What kinds of data do students use in their learning?') and close-ended questions where teachers respond by choosing from a list of options. Questions focused on teachers' understanding of the peace course, their instructional approaches, their use of data in their teaching and the challenges they encounter in the process (see Appendix A). Closed-ended questions included multiple option questions (such as 'How long have you been implementing this course?') and Likert scale questions (such as 'To what extent do you believe you have achieved the expected outcomes?'). The survey was first developed in English and translated to Spanish for ease of use by participants.

The participants were contacted via e-mail sent from public and private organizations who work with teachers in *Cátedra de la Paz*. The researcher approached project leaders and organizations that work with and support teachers in their implementation of the course, including *Laboratorio de Innovación de Ruta N, Plan Digital TESO, Laboratorio MOVA* and *Museo de Memoria Histórica*. This was done by organizing meetings with the organizations to present the study, looking for their support to send the information to the teachers involved in their projects. These organizations do not have access to the data that was collected in the study.

Following the contact with supporting organizations, the teachers received an email from the organizations inviting them to participate in the study with an active link to the web-based survey, where they were able to consent and complete the questionnaire. Given that the survey was sent by the institutions already mentioned, it is not possible to determine the number of survey links sent to teachers. From the unknown number of links to the survey sent, 48 survey responses were received, 3 were dismissed due to different factors (2 because they were incomplete and 1 because it was from somebody who was not a teacher). Finally, 45 survey responses were analyzed in this study.

4.3.2. Semi-structured interviews

Subsequent to the survey, 10 teachers were selected for a face-to-face interview. Selection of participants for the interview was based on 1) their willingness to participate, 2) the completeness of their responses in the web-based survey and 3) the variation of their contexts and background. The consent form for the survey included a question asking teachers if they are willing to participate in subsequent interviews. Since more than 10 teachers agreed to participate, selection was based on the relevance of their

experience and the variation in their context —the purpose being to involve teachers from different school contexts.

This interview had the purpose of providing a detailed conversation with participating teachers where they could express their views in their own words. It also allowed the researcher to ask follow-up questions and gain a deeper understanding of the issue under consideration. The interview also served as a means of triangulating the data obtained through the survey.

The one-on-one interviews were designed using an interview guide (Creswell, 2012) that provided a set of questions to guide the interview but gave freedom to the interviewer to ask or clarify aspects relevant to the study that are not responded clearly (Please see Appendix B). These interviews took about 20 minutes on average and were conducted in each of the teachers' schools, with the exception of two interviewees that had time constraints and were interviewed over the phone.

4.3.3. Consent

Following approval of the research by SFU's Research Ethics Board (REB), consent was obtained from each participant before they started filling the online survey. The consent form was displayed to participants before starting to answer the questions on SFU's web survey (<http://websurvey.sfu.ca>) and attached to each of the responses and stored using the SFU Vault service (<https://vault.sfu.ca/>). They were informed that they could skip answering a question if they feel like to and that they could withdraw at any moment.

4.4. Data analysis

In order to assure confidentiality, the identifying information was coded to guarantee anonymity of the participants. Teachers' quotes are presented by their participant ID under square brackets, for example [005] or [042].

4.4.1. Transcription and translation

The interviews were recorded and transcribed by the researcher. Given that Colombia is a Spanish speaking country, the survey and the interview were developed in English and then translated to and completed by participants in Spanish. For the analysis of the collected data, it was necessary to translate the responses back to English. For this, the translation was done following the strategy recommended by Mandal (2018). First, the researcher (who is bilingual — Spanish and English) translated all the survey responses from Spanish to English. Then, a back translation was done on 10 survey responses and two complete interview transcriptions, where the data was translated back to the original language by a third person who is fluent in both languages and is close to the educational studies, with a recently acquired master's degree in Education. The idea was to look for a dynamic equivalence (focused in the ease of understanding and acceptance of both versions). The result of this process assures the reliability of the translations. Appendix C presents examples from both the original and the translated language.

4.4.2. Open coding

After the responses were translated, interview transcripts and responses to open-ended questions were analyzed using segmenting, open coding and constant comparison (Strauss & Corbin, 1990). Segmenting is dividing texts into idea units. Idea

units (sometimes referred to as units of meaning) are segments of a text that communicate one idea representing what the participant is trying to communicate (Gebre, 2018; Gebre & Polman, 2016). Each segment is then assigned a code based on the meaning it communicates. Codes are defined as tags or labels that assign units of meaning to the segments of the interview transcript or a written text (Gebre & Polman, 2016). These codes allow to organize the information according to categories based on the analysis (Miles & Huberman, 1994). The software NVivo version 12, by QSR International, was used to perform this analysis for it provides tools to increase the effectiveness and efficiency of the analysis process (Bazeley & Jackson, 2013).

The first step was to examine and organize questions in the survey and the interview as they relate to and provide information about the research questions. This allowed the researcher to determine questions that provided similar information together. The author then used open coding to represent segments of responses. For example, participants responded to the question “what is the expected outcome of *Cátedra de la Paz* course for your students?” One teacher response may reflect one or more expected outcomes. In such a case, each will be coded separately. A segment from another participant’s response will be compared to already coded segments and if it the same, it will be coded together. If the new segment is judged to communicate a different meaning, a new code is assigned. This is what Strauss and Corbin (1990) described as open coding with constant comparison.

The researcher discussed the initial coding process with his supervisor for reliability of segmenting and coding. This included going through the responses of all participants to a single question, segmenting each response as appropriate and assigning code for each response/segment based on similarity or difference in meaning. Once agreed upon codes were created, the researcher did the coding of remaining

responses by himself. This analysis was an iterative process between participant responses, segments, codes and the research questions posed at the start of the study. Initial codes were then aggregated to create higher level thematic representations of participant responses as they relate to the specified research questions.

Chapter 5. Results

The initial framework of *Cátedra de la Paz*, provided by the National Ministry of Education (2015b) determined 13 topics that were to be discussed in the course, as described in the literature review section of this study. These topics are supposed to address the different issues that are relevant to teach in the course, where teachers can select and adapt these topics to the contextual needs of the schools and communities. Figure 5.1 shows the distribution of the topics covered by the surveyed teachers, taking into consideration that one teacher could integrate many topics into their implementation of *Cátedra de la Paz*:

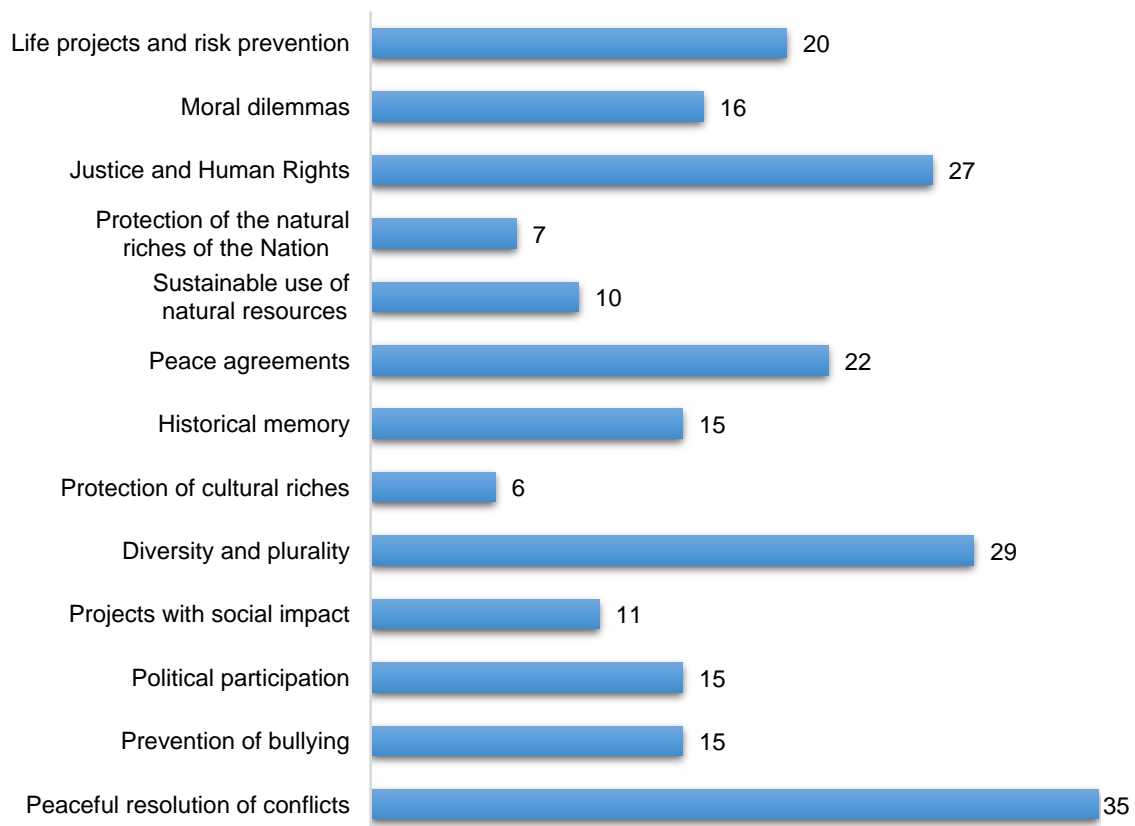


Figure 5.1. Frequency of topics teachers reported covering (Topics were identified in *Cátedra de la Paz* by the Colombian Ministry of Education, 2015b).

The top four frequently used topics were “peaceful resolution of conflicts” (N=35), “diversity and plurality” (N=29), “justice and human rights” (N=27) and “peace agreements” (N=22). On the other hand, the least frequently used topics were “protection of cultural riches” (N=6), “protection of natural riches” (N=7) and “sustainable use of natural resources” (N=10). Moreover, when asked about the number of years that *Cátedra de la Paz* has been implemented in their classes, most teachers (53%) said to have worked on the project between one and two years (see Figure 5.2). This is understandable given the recency of *Cátedra de la Paz*.

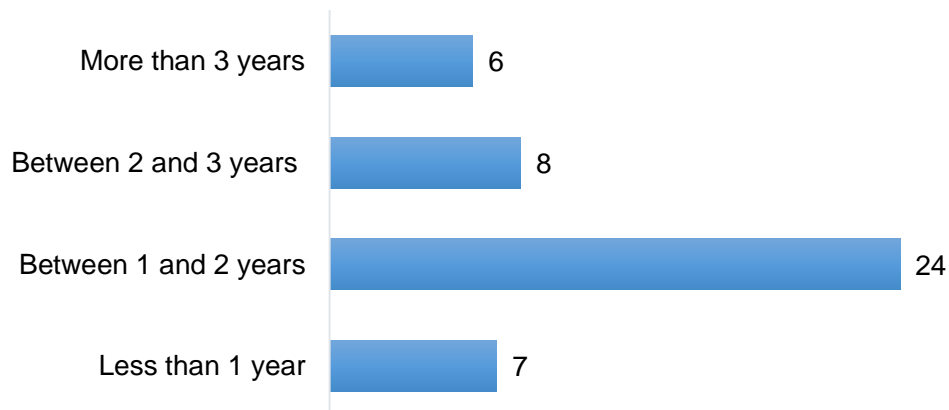


Figure 5.2. Number of years teachers implemented *Cátedra de la Paz*

Finally, when teachers were asked about the extent to which they think they have achieved the expected outcomes of *Cátedra de la Paz*, the most frequent answer is to have done it to a great extent, with 49% of respondents (see Figure 5.3). This result shows that most teachers are fairly confident about the extent to which they have achieved the goals of *Cátedra de la Paz* in the previous years of implementation.

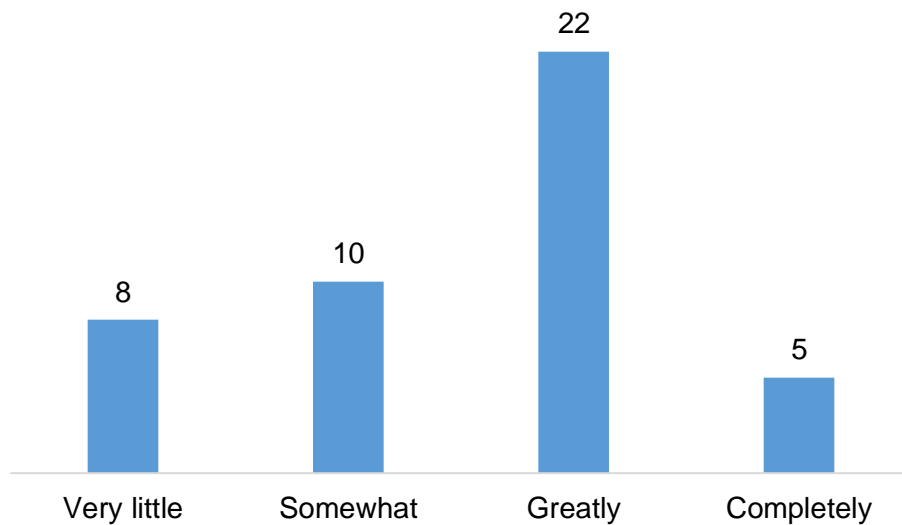


Figure 5.3 Extent to which teachers perceived to have achieved the expected outcomes of *Cátedra de la Paz*

While the previous information is important because it provides insight about what topics teachers are implementing inside the classroom, how long they have been implementing it and to what extent have the results been achieved, it doesn't provide insights about their understanding of *Cátedra de la Paz*, what challenges they have encountered or what instructional approaches have been used. As a way of understanding their rationale for the selection of topics from the framework and to capture their perception of the *Cátedra de la Paz* in their context, teachers were asked to describe what the course means for them and for their students. The following sections describe the qualitative analysis of different questions of both the survey and the interview with the purpose of answering the research questions specified in this study.

5.1. Teachers' understanding of *Cátedra de la Paz*

Analysis of the available data resulted in two categories that represent teachers' understanding of *Cátedra de la Paz*: 1) as a way to promote peace and citizenship and 2) as a way to improve classroom relations.

5.1.1. As a way to promote peace and citizenship

The first way of understanding *Cátedra de la Paz* seeks to empower students in their communities and promote citizenship and peace skills, while focusing on the historical and socio-cultural context around the discussed topics in the course. Three sub-categories were identified under this view: sense of belonging and ownership, citizenship skills, and conceptualization of peace. These three sub-categories are not mutually exclusive, rather related views of how teachers approach the course and its relevance for their students in the face of the challenges the country faces.

The first sub-category, sense of belonging and ownership, aims to empower the students about the history of the country, their communities, their cultures, and their role in society, encouraging students to “recognize conflicts and their consequences nationally and internationally based on history and its processes” [004]. A teacher explained the need for developing this sense of ownership by saying: “[the students] sought to know the history of the country marked by pain to recognize a sense of hope and viability of peace” [017]. Another teacher added that the goal for students is to “learn to value themselves and have a sense of belonging” in the community [034], and to “allow recognition [by the students] as part of society” [024].

This view reflects some problems that were identified by the teachers, such as the low self-esteem of the students and their lack of life projects due to stigmatization. A teacher explains this by saying: “[students] think that everyone has to have pity of them, and that the world has to feel sorry for them” [024]. Another related problem is the need to understand the political and cultural context surrounding their communities and the country: “Children have had to live [with] many things because they do not escape the

national reality. We are the home that welcomes children who, when they leave the institution, are often victims of the conflict” [016].

The second sub-category, promotion of citizenship skills, seeks to empower the students in their role as citizens. This view includes having plans for their lives, understanding their communities and becoming engaged citizens, as stated by a teacher: “we wanted the students to have a life project that would allow them to live healthily in community, to be trained as citizens of the world, taking care of the environment, contributing positive aspects to [their] family” [015]. A teacher added that the goal was for students to be “capable of constructing their own, critical and autonomous thoughts; that are recognized as a fundamental part of a society” [036].

This sub-category reflects the need of understanding the rights and duties of the students as citizens in the Colombian society, because “until recently the students did not know the forms of democratic participation within the democracy process” [029]. This also relates to the need of developing young adults’ ability to think critically about how society works, especially around the political system. A teacher justified this need as she expressed her frustration with the current situation of the country: “we have a corrupt political class, a political class that has no remedy” [010].

Finally, the third sub-category is conceptualization of peace, that seeks to counterbalance the culture of violence present in students’ lives, where “there are many armed groups, which determines a lot of the context in the institution” [006]. For example, a teacher says that in the community surrounding her school, the armed conflict was present for over 6 years, which is caused that “the school environment was horrible, [to the extent that] students threw themselves from the window” [005]. This

violence, as described by the teachers, usually relates to what students bring from their families:

You could say that from the 47 children who are attending my class, those from... complete family structure and that they get along well, are about 10, maybe. The rest are from completely dysfunctional families, they are families where the mothers work and the dads work, there are many separated families, there are many who live with a partner who is not the father (...) And you see that the most problematic children are those who have more problems in their homes. Although you would like the school to be a free space, that is a lie, you cannot leave the problems of your life outside, neither as a teacher nor as a student. [026]

This is reflected in the teachers' idea that *Cátedra de la Paz* must “awaken interest in participation in the construction of peace processes from the personal, family, school, neighbourhood and city levels” [007]. In this view, “the relevance for the students is that they, within society, will generate peace dialogues that will be taken to the family environment” [010]. Moreover, a teacher said that

it is expected to internalize the concept of peace in each of the participants in the project and deeply impact all members of the academic community, generating a change of attitude that improves coexistence within the institution and achieves a transformation in the actions of each one, with respect to the rights and freedoms of oneself and of others [016].

The following table summarizes the sub-categories identified in the teachers' understanding of *Cátedra de la Paz* as a way to promote peace and citizenship:

Table 5.1. Summary of teachers' understanding of *Cátedra de la Paz* as a way to promote peace and citizenship

Code	Definition	Examples
Sense of belonging and ownership	Focuses on developing students' awareness about the status of the country, ownership of the historical background and need to work towards the peace process.	“recognize conflicts and their results nationally and internationally, based on history and its processes” [004] “the purpose was for the students to take ownership of Colombian history” [017]

Code	Definition	Examples
Promotion of citizen skills	Seeks to promote understanding of the rights and duties of the students as citizens in Colombian society.	<p>“We wanted the students to have a life project that would allow them to live healthily in community, to be trained as citizens of the world” [015]</p> <p>“that they are capable of constructing their own, critical and autonomous thoughts; that are recognized as a fundamental part of a society that requires urgent changes from the citizen contribution” [036]</p>
Conceptualization of peace	Seeks to promote a culture of peace in the student’s life and communities.	<p>“the relevance for the students is that they, within the society, will generate peace dialogues that will be taken to the family environment” [010]</p> <p>“it is expected to internalize the concept of peace in each of the participants in the project and deeply impact all members of the academic community” [016]</p>

5.1.2. As a way to improve classroom relations

The second way of understanding *Cátedra de la Paz* relates to the sensitivity of the students towards the discussed topics in the course, where conflict-resolution and attitudes of respect are promoted inside the classroom. Two related sub-categories were identified: the decrease of violence inside the classroom and the promotion of respect and tolerance. Similar to what was described in the previous category, these two sub-categories are not exclusive, but rather integral ways in which teachers deal with classroom level issues related to the course.

The first sub-category, the decrease of violence in the classroom, focuses on how the students see their interactions with each other by promoting that “the students learn to be aware of their emotions and process them successfully in the midst of everyday conflicts” [040]. In this view, students are expected to learn that “in the face of conflict there are several ways of response: to attack, to flight or to resolve through dialogue (...). They must evaluate their attitudes when they are responding to the conflict in a certain way” [012].

This sub-category focuses on how to solve conflicts the students might face in the classroom, as those described by a teacher: “There were fights all the time, you could not teach; there was no possibility of dialogue, you could not stay calm for 5 seconds; there was no concentration; there was no disposition and above all there was no belief in education or in the possibility of the future” [005]. For the participant teachers, this issue relates as well with students’ families, because “today kids grow up according to the place where they live, and families around here are very dysfunctional, and all that is learned from their homes” [009].

The second sub-category, respect and tolerance, refers to the ability of the students to coexist in a diverse culture. Teachers argue that this is important because there are “children displaced by violence” [026] and “many indigenous groups, and now there is also a lot of Venezuelan immigration. That makes it very difficult to relate in the community [because] there is evidence of discrimination” [006]. This causes that the areas where they live are described by the teachers as “a pretty tough community. Because there are people who come and leave, come and leave” [010].

This way of understanding *Cátedra de la Paz* relates to the objective of “integrating the community organically, and that they do not see [difference] as a problem but as a way of interacting with other cultures” [006], where students are “aware of the importance of respecting themselves and others” [014]. The expected outcome, as described by a teacher, is that “they can work better in a group [and] the classroom becomes more friendly” [005].

The following table summarizes the sub-categories identified in teachers’ understanding of *Cátedra de la Paz* as a way to improve classroom relations:

Table 5.2 Summary of teachers' understanding of Cátedra de la Paz as a way to improve classroom relations

Code	Definition	Examples
Decrease of violence in the classroom	Focuses on how the students interact with each other, building better ways to solve conflicts.	<p>“the students learn to recognize their emotions and process them successfully in the midst of everyday conflicts” [040]</p> <p>“in the face of conflict there are several ways of response: to attack, to flight or the solution. We have worked with the boys that; they evaluate when in their attitudes they are responding to the conflict in what way” [012]</p>
Respect and tolerance	Seeks to promote the ability of the students to coexist in a diverse society.	<p>“integrating the community organically, and that they do not see that as a problem if not as a way of interacting with other cultures” [006]</p> <p>“They can work better in a group. The classroom becomes more friendly. They want to go to class. My neurosis is lowered, and I can better control my authoritarian structures. We try to negotiate authority; we talk about how to distribute power” [005]</p>

As it was mentioned before, the categories and sub-categories of understanding *Cátedra de la Paz* are not necessarily exclusive of each other but a range of views that teachers express around the course. This is better explained by a teacher, who says that “thinking about *Cátedra de la Paz* was a process of thinking about how to transform the classroom, but at the same time of thinking about the armed conflict” [005]. Rather than having to choose between visions, teachers transit between them.

These integrated views relate to the way the problems teachers perceive in their communities are not only represented in what happens in the classroom and around the schools, but as complex in both nature and origin. For example, a teacher said that “what we see daily, what we see in everyday life is that conflicts are solved by means of shouting, insults, physical aggression, and what is wanted is totally the opposite. I think that there was a very important wager to teach young people these alternative methods of solving conflicts” [003]. Other issues, such as the polarized political context, the use of drugs and dysfunctionality in families are seen as well as problems that transcend any particular view, and that need to be addressed in an integral way.

The transition and integration of this view is more evident in the case of the teacher that created a project with a clear objective in mind, but when faced with the reality of the school context, had to change it:

The project that we did was born as an anti-bullying project. It was the first thing we thought, which was to create a website that promoted the prevention of bullying. Then we thought that the issue of bullying had a lot to do with the topic of coexistence and how we were able to establish relationships with others based on the previous experiences that we brought from our families, from our homes. And we realized that these influences, which were part of our lives, were mediated by the environment, by the social situation we were living in the country and the neighbourhoods, that our experiences are not alien to everything that surrounds us. [016]

5.2. Teaching strategies and challenges in *Cátedra de la Paz*

Following the analysis of the teachers' understanding of *Cátedra de la Paz*, this section presents the identified teaching practices and challenges when implementing the course. For this analysis, responses from one question of the survey were used: *'What kind of teaching strategies do you use in the course? Please describe the kinds of teaching methods you use to enact your views of the peace course.'* Also, responses from the following questions in interview were used: *'How do you implement your view of Cátedra de la Paz? What teaching strategies do you use?'*, *'Give me examples of your typical class when you implement the course'* and *'What challenges have you faced when implementing Cátedra de la Paz?'*

5.2.1. Teaching strategies

The analysis of the survey and interview data resulted in four strategies that represent teachers' instructional practices in *Cátedra de la Paz*: creative strategies, direct instruction, dialogue and collaboration, projects and context-oriented strategies. In

this section each practice will be presented followed by an example. It is important to notice that the four categories do not reflect theoretically-built strategies (such as Project-Based Learning or Collaborative Learning), since there is not enough information from the surveys to do this, but rather a categorization of the available data in codes that were assumed proper by the author of this study.

The first identified category is creative strategies, that involve students in artistic activities to promote inquiry around the relevant topics in *Cátedra de la Paz*. This approach includes activities such as “making theatre performances so that everyone can see how conflicts are resolved” [002], oil painting [001], audiovisual creation [041], and cartoons [003]. One identified advantage of this strategy is, as described by a teacher, “that is what gets the students attention, that moves them a lot” [024]. For example, a teacher created a contest to write short creative stories about what peace meant for the students, open to all the schools in the municipality of Bello:

When the contest opened, we expected to receive 60 or 70 stories, but the number of stories that were received exceeded all our expectations, and all the logistics we had designed. When the contest became so big, we went to the Ministry of Education and they supported us. The Personería de Bello also participated. We did awards by categories because students of all ages participated. We did workshops to prepare the students to write their story, and they were given the task of not only writing their story, but to try to write it well [016].

The second category is direct instruction, that involves teacher-centred activities that seek to promote students’ understanding of the relevant concepts. Activities in this category include workshops [010], explanations by the teacher [017] and consultations [033]. For example, one teacher focused his project around conflict-resolution, where he explained the topics to the students: “we are working specifically with the alternative methods of conflict resolution, we are going to start explaining each one of the

strategies. They participate, answer questions, do workshops, do different activities so that they understand the methods of conflict resolution well” [003]

The third category, dialogue and collaboration strategies, focuses on collaborative activities such as forums [011], debates and guided discussions [008], roundtables [029] and discussions of cases [044]. A teacher, for example, does an activity called ‘The Destroyed Bicycle’, that

... raises the situation between two boys who have a conflict because one of them got a new bike, then went with a classmate who already had a bicycle to take a ride, and then the one with the new bicycle leaves to the care of his companion the bicycle because he had to go into the school to do something. And when he arrived, his partner had been careless, and he realizes that his bicycle is destroyed. That will generate a conflict between the two. Then, as a result of that situation, we make the children to analyze it, think about what happened (...). They reflect, dialogue, and then present to the rest of the group [012]

This approach has the advantage that teachers are able to learn more about the students, as expressed by one interviewee:

that's where you begin to know them. A boy arrives, for example, and says ‘teacher, I just saw [another student’s] house, they beat and mistreat him’, and you say ‘ah, that’s the reason’. And that allows you to be more receptive to the child, because sometimes what they need is for you to be close [to them] without judging [026]

In the fourth category, project and context-oriented strategies, teachers approach real-life situations in the classroom with long-term projects. According to the interviewees, this approach has the advantage that it allows them to address the relevant topics by focusing on specific issues, which promotes reflection in the students: “you have to bring them in a dynamic way where another reality is built and they can question, from that other reality (...) the issues directly [related to] the armed conflict” [005]. An example of this approach is described by a teacher that started a project with sixth graders to teach pre-schoolers how to avoid discrimination, where “as a final

product, they made a socialization of a didactic booklet with preschool children, wanting to show them how to avoid discrimination”. [006]

Strategies in this category also promote student recognition of their context, by including activities such as visiting museums [007], revising historical documents and movies [029], and observing in and around the school [042]. A teacher, for example, created the following activity: “we talked about the La Mina river. As I know little of this community, I asked the students to investigate about it. So, what did I do? I made them observe and talk to the oldest people around” [009]. The goal for this teacher was to promote recognition in the students of the importance of this river for the community and to promote the protection of natural resources.

The following table summarizes the findings around the instructional strategies used by teachers in *Cátedra de la Paz*:

Table 5.3 Summary of teachers’ instructional practices in Cátedra de la Paz

Strategies	Examples of activities
Creative practices	Theatre [002], oil painting [001], audiovisual creation, [041], cartoons [003], and memes [005]
Direct instruction	Theoretical classes [004], workshops [010], explanation by the teacher [017], and consultations [033]
Dialogue and collaboration	Forums [011], debates [036], guided discussions [008], roundtables [029] and discussions of cases [044]
Projects and context-oriented	Newspapers [027], STEM projects [005] and peer-to-peer support projects [006]

5.2.2. Challenges of teaching *Cátedra de la Paz*

Following teachers’ understanding of *Cátedra de la Paz* and their teaching practices in it, four challenges that affected the implementation and achievement of their instructional goals were identified: institutional challenges, the nature of the topics, students’ interest, and teachers’ preparation and participation.

The institutional challenges relate to the support, continuity and clarity provided by both schools and the government in relation to the implementation of *Cátedra de la Paz*, which was frequently mentioned by teachers as the main problem when teaching the course. One issue related to this challenge is how differently *Cátedra de la Paz* is implemented by each school. A teacher explains this by saying that “in the institutions the dynamic with *Cátedra* is very diverse because the law itself opens a framework of flexibility” [005]. The lack of clear organization led to three different ways in which *Cátedra de la Paz* is implemented: 1) as a standalone course with a determined time and space, 2) as a project that could be integrated to several other courses or organized as an extra-curricular activity, or 3) as a subject that is taught inside another course (for example, a topic inside social science).

This issue is reflected on schools that have changed how *Cátedra de la Paz* is implemented over time (for example, changing from a course to a project) or that completely stopped its implementation. A teacher, for example, said that in her school “*Cátedra de la Paz* was given last year as a course (...), this year was given as a project” [028]. Another teacher, when asked about what the most difficult part of teaching *Cátedra de la Paz* was, responded: “The most difficult thing, this year, is not having *Cátedra* as a course in the school” [010]. This lack of clarity and continuity has led to a confusion among teachers about what to do with *Cátedra de la Paz*, as expressed by an interviewee: “what happens now? Are we still teaching *Cátedra* or do we not have to keep teaching it? Does the process continue, are we going to take it into account for the evaluations? Or do we not take it into account? Do we take it out of the system, do we keep it in the system? Do we keep it in the institutional educational project or not? Nobody knows” [024].

Moreover, some projects of *Cátedra de la Paz* existed before 2014, when *Cátedra de la Paz* was first mentioned by the government. These implementations were adjusted to the law to be related to *Cátedra de la Paz* in order to satisfy the new requirements of the government. For example, a teacher says that her “project began when *Cátedra de la Paz* did not yet exist, nor the subject of peace was fashionable (...), it was prior. I think that was an indicator that we really needed to talk about this issue within the institutions” [016].

Another related institutional challenge expressed by the teachers is the lack of resources inside the school to implement *Cátedra de la Paz*, which could be time, spaces to work, teacher assignment or budget. The results of this issue led to different problems, as expressed by a teacher: “I did not have time, it was very hard to find the time to be able to work, we left some things uncomplete” [006]. Another teacher said that “if there is no assigned teacher, with a time and a budget, you can’t really see what could be achieved in *Cátedra*” [005]. Another resource that teachers identified as necessary is clear guidelines to support and guide the implementation of the course. In relation to this, a teacher said that “the challenge was the beginning, because in *Cátedra de la Paz* there was not even the plans of the course” [003]. Because of this, some teachers do not have enough clarity about how to teach the relevant topics to the students: “the Ministry sent such general guidelines that you can do anything, or you can do nothing, and you [can] still achieve what they say” [026].

Finally, in relation to the institutional challenges, teachers expressed that there is a lack of support by the educational community. A teacher, talking about the learned lessons of the implementation of *Cátedra de la Paz*, said: “We learned that the project has to be born from a collective construction, it cannot be led by a single person, but it has to be born of the conviction of an entire community so that a project like this works”

[016]. Teachers refer to this as the need to have administrators on board with their initiative, which has proven to be hard: “the most difficult thing is getting institutional support” [028].

The second identified challenge when teaching *Cátedra de la Paz* relates to the nature of the topics covered in it. The teachers described the relevant topics as “very complex issues to address” [007], especially because “when we are talking about peace and coexistence, we are talking about something very complicated” [016]. This reinforces teachers’ argument that it would be easier to have structured guidelines on how to approach the topics: “It is easier if they tell me ‘in *Cátedra de la Paz* you have to work on the independence of Colombia, then you have to work on peace agreements, then wars in Colombia, then you can work on the whole part of self-esteem, diversity” [024]. This challenge is also related to the fact that *Cátedra de la Paz* must be assessed by the teachers, because “as a subject, it must be evaluated. And in this matter, it is very hard. If you speak of responsibility and solidarity; how do I say that a student does not respond to the values of peace? It is that sometimes the words are so complicated” [026].

The third challenge identified by the teachers was the students’ interest, which relates to the perceived lack of commitment among students and their negative attitude towards the content. In this sense, teachers say that some students do not “engage in learning processes with the responsibility that they could assume” [036]. Moreover, a teacher said: “the difficult thing is the lack of motivation, disposition for everything that has to do with the academic” [012]. Teachers also identified the violence and negative attitudes that some students bring to the classroom as a challenge, as described by a interviewee: “sometimes they get aggressive, they are kids who sometimes are

mistreated at home, they are very abandoned at home because Mom works, and they stay all day just watching their house” [003].

The last perceived challenge is related to the teachers’ preparation and participation in *Cátedra de la Paz*, where teachers perceived that they are not trained nor prepared to teach the course and its complex topics. For example, a teacher said: “You talk to them about [the relevant topics], but do we really understand what the peace agreements were, what was done or how were they made? Then, if you do talk about it, what do I do if I do not have it clear, how am I going to get to explain it to them, what if they ask me a question, what do I say?” [024]. This is connected to the perceived lack of preparation by the teachers, and as one surveyed person said: “we did not design a serious process and ended up doing sporadic and isolated activities without real impact on the students” [020].

Another issue related to the teacher’s participation In *Cátedra de la Paz* is that other teachers can act as a barrier for the implementation of the course. This is described by one interviewee that implemented *Cátedra de la Paz* as an extracurricular project looking to support students who were drug addicts: “Sometimes even the teachers themselves are a barrier, where the traditional teachers say ‘ah, if this boy did not come to class, then he has to fail my course’. Then the boy has to choose to say that he either loses the subject or he will participate in the project to rehabilitate himself” [028]. In this regard, many teachers said that *Cátedra de la Paz*, more than a view of what was needed for the schools or their classrooms, was being implemented just to follow the rules: “in most schools it is done to comply with the law, not because it is an integrated process” [005], where “[the teachers] sometimes saw it as an obligation” [024].

The following table summarizes the findings related to the challenges that teachers encounter when implementing *Cátedra de la Paz*:

Table 5.4 Summary of challenges when teaching *Cátedra de la Paz*

Challenge	Specific issues	Examples
Institutional	Clear guidelines Resources Continuity and structure Support	“institutional limitations that are established by the directives, both in terms of time and resources for the project, as well as the censorship of methods and topics, the fact that most schools are a transversal project of topics, does not allow more than doing billboards and 2 silly work guides per year” [005]
Nature of topics	Clarity in the scope Assessment	“As a subject, it must be evaluated. And in this matter, it is very hard. If you speak of responsibility and solidarity, how do I say that a student does not respond to the values of peace? It is that sometimes the words are so complicated. And sometimes there are good things that you see that do not stay there either” [026]
Student’s interest	Student’s commitment Student’s background	“They do not engage in learning processes with the responsibility that they could assume and undervalue the possibilities of contributing to society with those specific changes” [036]
Teachers’ preparation and participation	Lack of training Act as barriers for implementation	“We did not design a serious process and ended up doing sporadic and isolated activities without real impact on the students” [020]

5.3. Perceived role and usage of data in *Cátedra de la Paz*

Teachers were also asked about their views of data in relation to *Cátedra de la Paz*, where the purpose was to examine the extent to which they integrate data in their teaching and also learn about the kinds of data they use for their purposes. Analysis of responses showed that 73% of the participant teachers feel completely or near completely comfortable integrating data into their teaching practices. Only 27% reported feeling limited comfort as they responded “somewhat” (N=8) and “very little” (N=4). Figure 5.4 presents teachers’ self-assessment of their capabilities to use data in the classroom.

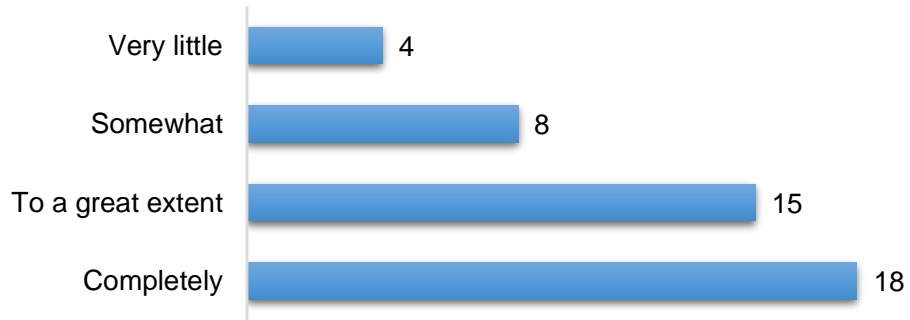


Figure 5.4 Extent to which teachers are comfortable integrating data in *Cátedra de la Paz*

As indicated in Figure 5.5, 80% of teachers use data in their teaching at least “several times in a month” with 40% reporting use of data every day in their classes.

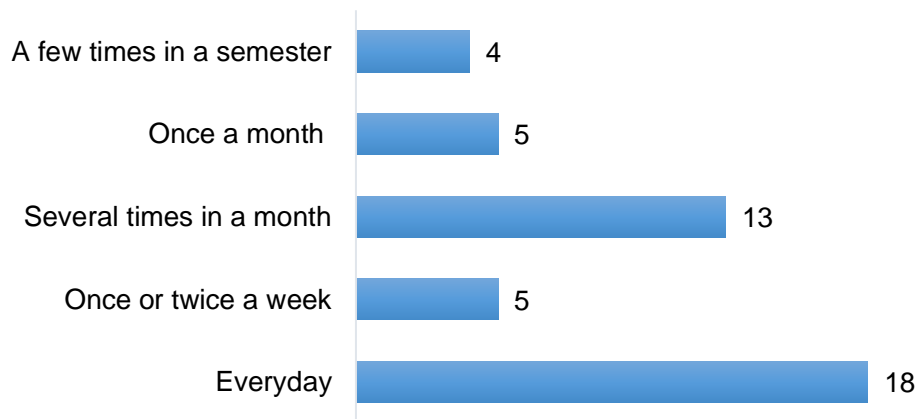


Figure 5.5 Frequency of teachers use of data

In order to further explore teachers’ understanding of data and their use of it, responses from open-ended questions of the survey and the interview were analyzed. These analyses include answers to questions such as ‘*What kinds of data do you use as part of your teaching practice in the peace course?*’, ‘*How comfortable are you about using data in your teaching?*’, and ‘*What do you think is the role of data in this vision?*’.

Interviewed and surveyed teachers reported using data for the purpose of informing and providing context to conversations in the classroom and to foster grounded perspectives in classroom discussions. For teachers, this is especially relevant since the topics related to *Cátedra de la Paz* tend to be emotional with limited concern for the perspective of others. One teacher who reported being mostly comfortable using data in her teaching practices explained that incorporating data is “of utmost importance to know the reality [and] act effectively” [006]. Another teacher highlighted the importance of integrating data to inform and contextualize, saying that it “helps [the students] to better see the dimension of the issues addressed” [023].

The idea that data is useful to inform and contextualize also includes the way some teachers see data as a way to support their instructional activities, where data provides evidence of what is working or not inside the classroom. In this sense, one teacher said that he uses data to gather evidence about what happens inside the classroom and creates strategies to respond to this: “thanks to [the data] we can create hypotheses that seek to improve the indices” [032]. Furthermore, under this view teachers define data as “inputs or information that [they] use for [their] teaching practices” [001].

However, teachers’ responses about the role and nature of data vary considerably. On one side, most teachers view data as being value-neutral, where it is expected that their students use data in order to understand reality with a ‘neutral perspective’. A teacher stated that, “If the students can visualize the data with the reality, it will give them a veridic and dimensional vision of the analyzed data and situations” [026]. Another teacher added: “I think the data keeps [the students] grounded [and] with neutrality” [016]. On the other side, some teachers see data as a tool that can help to “create a critical conscience” [010] in the students. In this view, data is not only a tool to

promote a “neutral perspective”, but it must also be criticized, because it is defined as a “statistical analysis of a reality, corresponding to the teachers and students to assume the role of analyzer” [025]. A teacher, for example, argued that it is necessary to “teach students to be very critical of the data they are given (...). Really, many times [the media] make up the statistical data so that it comes out with what they want to. So, it is very important to teach them to be critical of that: what we are seeing, is it real? [024].

Moreover, when teachers are looking for data, they do so in two different ways: by its source or by its topic. The first way, by the source, emphasize on the origins of the data and where they got access to it. In this sense, teachers use different sources. For example, most teachers expressed that they get data from the media (such as TV, newspapers, radio, etc.), as a teacher explained that he uses “all the data that is offered by the various media that account for the social reality in which it is immersed” [007]. This shows that teachers rely on media reports to find data for their courses, which could be biased or decontextualized. A teacher described a situation where he used data from the media:

Yesterday in class I mentioned that the military hospitals in Colombia, last year after the peace agreements, had 3 or 5 people hospitalized (...). About 3 or 4 years ago, we had those hospitals with more than 3 thousand wounded combatants. I only gave that information to the kids yesterday. I am not an expert in data, nor do I handle all the precise data, but I hear a lot of news. And that news told us that information, and I told myself that this information was interesting and the children said "no, it is true, somehow the peace agreements have positively impacted the country", even though there are questions about the policies that do not agree with the peace agreements (...) But the data does not lie. [003]

However, not all teachers rely on data from media reports and use sources that provide more contextualization for the data or that are specifically organized for educational purposes. Some teachers, for example, use sources for their data such as governmental offices or NGOs. These datasets can come from “Institutional, regional

and national guidelines and reports” [004], “information provided by state institutions” [008], or the “official government sources of the Havana peace agreements” [033], among others. Other teachers expressed to use educational resources as a source for their data, relying on material that is available for them at the school, such as textbooks (e.g. “Santillana *Cátedra de Paz*” [009]) or other “didactic material” [022].

Moreover, some teachers collected data in their classroom, where either the teachers or the students are in charge of gathering the data, which can include “results of workshops” [016] or “surveys” [029]. This has the advantage that it allows the teachers to adapt and contextualize the data to better respond to the contextual needs of the community, as exemplified by a teacher that collected her own data: “We did two large surveys and made several small focus groups, and treated them as sources of information (...). All that is information that bases our project” [016]. The collected data was the foundation for her project in *Cátedra de la Paz*, helping her to define the needs of the community and the best way to approach the students.

Teachers usually don’t rely only on one source for their data but combine many of them, such as a teacher who said: “Usually I always try to recommend different sources of information from search engines, in which I find concrete and truthful information: Official pages of non-governmental organizations, databases, magazines, web quest, etc.” [001].

The second way teachers look for the data they use in *Cátedra de la Paz* is by topic, where they are focused on the content of the data rather than its sources or forms. Two relevant topics of data were identified by the participants: historical and from their context. In the historical data the main focus is on data that talks about Colombia, especially “referring to what happened with the peace process” [037] and the

“conformation of the country during the conquest, the colony and independence and then how this influences the conformation of the guerrilla groups of the country” [010] where “students use historical data to talk about what they have learned in class” [010]. Sometimes teachers also use historical data to reflect on the current situation of the country, as a teacher describes:

These days I also heard another fact, they told me that, in the municipality of Granada, Antioquia, of the 1800 people who lived in the 90s, they received many bombings from the guerrilla, and in that town, there were 5 people living in the hardest of violence. The others migrated or died. Look, that is a fact, one that causes a very deep impact. How will a town of 1800 people be left with 5 people alone? That is very sad. I gave this data to the students and they said, "my God, that town is a ghost" [003].

Teachers also use data from their context, where the main focus is information about the students’ life and their surroundings. For example, a teacher used the “number of conflicts presented during the week [and the] disciplinary processes that occur during the term” [040] to reflect on improvements and challenges. Teachers usually cannot find data of external sources for this, so they have to rely on their own methods of collection. In this sense, a teacher reflected on how localized and contextualized data could be more useful than data about the whole country: “You could then have more information about the students, which would make them more of a person for us. [...] If we could do it closer to their lives, I think that statistical information would be more understandable” [026].

The Table 5.5 summarizes the type of data used by the teachers in *Cátedra de la Paz*:

Table 5.5 Summary of data used by teachers in Cátedra de la Paz

Category	Sub-category	Examples
By source	Media	“Data I have consulted on the internet, taken from news and newspapers” [025].
	Institutional	“Those provided by the health and police offices” [026]

Category	Sub-category	Examples
By topic	Educational	"From Santillana's 'Cátedra de Paz'" [009].
	Collected	"Results of own surveys" [016]
	Historical	"For the special case of the armed conflict in Colombia, we have decided to use all the Historical Memory production carried out by the CNMH before 2017" [001]
	From their context	"Number of conflicts presented during the week. Disciplinary processes that occur during the period" [040]

5.4. Challenges when teaching with data

Finally, when the participant teachers were asked about the challenges they face when teaching with and about data, participants responses were coded in three different issues: 1) the accuracy and availability of data, 2) teachers' skills, and 3) students' motivation.

The first issue, accuracy and availability of data, happens when teachers cannot find relevant or accurate data for *Cátedra de la Paz*, in relation to both the sources and topics of the data they look for the course. As explained by teachers, this is caused by the "little documentation of the country's history" [017], or because "there is not an institution responsible for grouping the different existing data on the conflict in the country" [008]. So, while they look for data, they try to "consult more viable sources, because we usually find them on the Internet, [but] sometimes they are not what you consider them to be" [024].

This issue also relates to the fact that the available data is not very relevant to their teaching goals, since they think that "the data should be as close as possible to their personal reality and sometimes the data or national realities occur in contexts very different from those experienced by children" [043]. A teacher, explaining this issue, says that it would be "very interesting that it would be data about the country, because

sometimes we talk about the wounded of the Second World War, or another pile of external data, and we do not know the data of our country” [003].

In contrast to the high percentage of participant teachers who said to be mostly or completely comfortable integrating data into their teaching practices (as shown in Figure 5.4), analysis of the open-ended questions revealed issues related to the teachers’ skills to use and integrate data in their practices. While they recognize the importance of data to inform and contextualize the conversations in the classroom, they see a challenge to put it into practice: “data is difficult for us, the teachers, because we do not handle it accurately” [003]. For example, a mathematics teacher argued “that one of my weaknesses is statistics, and normally when we talk about data, we use a lot of that statistical part” [024]. In this sense, teachers say that this challenge is related to the fact that “more training is needed in all this, by the universities, by the municipalities and by the state so that we can address the difficulties. We lack resources” [012]. Moreover, a teacher said that they “need support from the Ministry of Education and the local offices in terms of training, because many times teachers are not trained to do data analysis. It is something that we have to learn on our own” [016]. This challenge shows that teachers’ view of data is mostly quantitative, leaving aside other type of data that could be relevant for them and does not require statistical training, such as those related to the everyday life of the students.

The final identified issue relates to the students’ motivation, where teachers perceive that students don’t have the “disposition. They like to come to school, they feel safe here. It is harder to take the step to the academic, to study, to think about the issues in a more conceptual way” [012]. Moreover, they argue that students “are very afraid of mathematics. They are afraid of anything they see with numbers. Then you

have to start to remove that fear of mathematics from them and to see that mathematics is not only equations” [024].

The following table summarizes the challenges teachers face when integrating data in *Cátedra de la Paz*:

Table 5.6 Summary of challenges when integrating data in teaching practices

Challenge	Definition	Examples
Accuracy and availability of data	Difficulty to find relevant or accurate data for their teaching.	“What happens is that the information is very fragmented. For example, the DANE has information, but not real life data, such as to make a population study and know who lives with mom and dad, who works, who have televisions ... that is a statistic that would be more in line with real life of them, and it would be very useful. As to know who has a computer to do their homework. If we could manage that type of strategy, to do it with data from our own context, it would be very good”. [026]
Teachers’ skills	Lack of skills to integrate and use data in their teaching practices.	“Data is difficult for us, the teachers, because we do not handle it accurately. But as long as you have the data, you have to teach them because it helps us to have that general vision of what happens”. [003]
Student’s motivation	Difficulty of engaging students to use and integrate data in their learning.	“It is a challenge that students handle data” [003] “That students are very skeptical about the data and do not consider it useful” [035]

Chapter 6. Discussion

The purpose of this study was to address four issues: teachers' understanding of *Cátedra de la Paz*, their instructional approaches to enact their vision of the course, their views on the role of data and the challenges they face when integrating data. The exploration of these issues sought to provide information to improve the course and the resources that support its implementation. The first section of the results responded to the first research question (*What is the public secondary school teachers' understanding of Cátedra de la Paz and its relevance for their students?*), where two ways by which teachers understand *Cátedra de la Paz* were identified. These are: as a way to promote peace and citizenship (aiming at the empowerment of students as citizens with a culture of peace), and as a way to promote better relations in the classroom (seeking to encourage conflict resolution skills and respect in the students). These findings highlight that, despite the compartmentalized topics in the framework provided by the Colombian Ministry of Education (2015b), teachers understand and implement *Cátedra de la Paz* in an integrated and complex way, where they see the course as useful since it is a way to address community problems and foster students' understanding of peace and coexistence.

These results highlight that teachers see *Cátedra de la Paz* as a 'framework of flexibility,' where different views, issues and teaching strategies can coexist. Furthermore, this shows the complex nature of both the topics and the contexts in which the course is implemented, where teachers struggle to know what to do and think critically of its content, consistent with the findings of the previous study by Díaz and colleagues (2016). Following this, it is necessary to create teacher training scenarios in relation to *Cátedra de la Paz* that focus on skills to implement the course in a way that is

consistent with their understandings of the course and the needs of their communities (Huertas Díaz, López Gómez, & Fonseca López, 2018), with an emphasis on reflective and critical competencies that allow teachers to properly contextualize their implementation of *Cátedra de la Paz*, as suggested by García Vallinas (2012).

These results also emphasize the need for designing support strategies to be context-specific, considering teachers' understandings of *Cátedra de la Paz* and the relevance they see of the course for their students and communities. Furthermore, if their views are not taken into account, they could act as a barrier to impede fundamental change and prevent the goals of *Cátedra de la Paz* from being accomplished (Ertmer. P.A., 1999). In order to design these context-sensitive strategies and resources, it is necessary to better understand teachers' beliefs and practical knowledge that reflect their views of the course, relevant topics and their contexts (Pajares, 1992). To achieve this, the systematization and reflection around teachers' understanding and experiences while implementing *Cátedra de la Paz* must be promoted, as suggested by Bermeo and Garcia (2016), looking to amplify their voices and actively listen to their views and needs (García Vallinas, 2012).

Following teachers' understandings of *Cátedra de la Paz*, the next section of this study responded to the second research question (*What instructional approaches do public school teachers use to enact their vision of the course Cátedra de la Paz?*), where four teaching practices were identified in the analyzed data: 1) creative strategies, 2) direct instruction, 3) dialogue and collaboration, and 4) projects and context-oriented strategies. These instructional approaches show the variety of practices in which *Cátedra de la Paz* is implemented that represents how teachers put their understandings of the course into practice. Regarding these strategies, teachers argue that their approaches were suitable for their context and needs, consistent with the previous

findings of this study that show that they see that course as a 'framework of flexibility' where almost everything 'fits' the goal of the course. However, several authors (Amorocho Herrera et al., 2019; Hernandez Arteaga, Luna Hernández, & Cadena Chala, 2017) argue that traditional teaching practices might fall short in the Colombian context to achieve what is expected of peace and citizenship courses. In this sense, approaches that encourage learning by doing should be promoted among teachers, since they make it possible for students to practice their skills in different settings (Amorocho Herrera et al., 2019).

Additionally, four challenges teachers face when implementing *Cátedra de la Paz* were identified: institutional challenges, the nature of the topics, students' interest and teachers' preparation and participation. Following Windschitl's four dilemmas (2002), the identified challenges could be reframed: the perceived complexity of the topics can be seen both as a conceptual dilemma (doubts about the understanding of its underpinning foundations) and as a pedagogical dilemma (doubts about the instructional approaches to the course); both the students' skills and interests and the teachers' participation can be seen as a cultural dilemma, where teachers are trying to discover and understand the transformation of the pedagogical environment; and institutional challenges represent a political dilemma, where there is resistance in the relation with the different stakeholders in the educational community. Reframing the challenges in this way allows to better recognize the implications of teachers' understanding of the course by identifying particular issues that impede the transformation of the learning environments that are necessary to achieve the goals of *Cátedra de la Paz*.

Furthermore, it is worth paying attention to the institutional challenges since they are the most mentioned problem by the interviewed and surveyed teachers. The issues identified in this challenge (lack of resources, support and continuity) are related to the

role of both the government and the schools. In this sense, the legal foundation of *Cátedra de la Paz* (Ministerio de Educación Nacional, 2015a) is clear about the obligations of these institutions to implement the course (Álvarez & Marrugo Padilla, 2016; Díaz et al., 2016; Giraldo et al., 2015). If these obligations were fulfilled, the resources inside the schools, the continuity of the course, the creation and update of relevant guidelines and the support of its implementation would be assured. So, while the legal framework of implementation of *Cátedra de la Paz* is outside the scope of this study, teachers perceived that schools and the government are not fulfilling their obligations in relation to *Cátedra de la Paz*, and that addressing these issues could help to achieve the goals of the course. These identified issues are consistent with lessons learned by previous implementations in the Citizenship Competencies Program in Colombia (Patti & Espinosa, 2007; Velásquez et al., 2017), showing that *Cátedra de la Paz* is repeating some of the mistakes made by previous peace and citizenship initiatives in Colombia.

Concerning the third research question (*How do teachers view the role of data in implementing Cátedra de la Paz?*), responses of both the survey and interviews show that teachers see data as a way to inform and contextualize classroom conversations about the relevant topics in *Cátedra de la Paz*. This view reflects teachers' beliefs and practical knowledge related to the potential of data, which are important because they affect the way teachers could integrate data inside the classrooms (Datnow & Hubbard, 2016). Furthermore, three issues need to be highlighted from this analysis: the repeated mention of media as a relevant data source for *Cátedra de la Paz*, the fact that most teachers saw data as being of 'neutral value', and the predominant view of data as a quantitative. These three issues highlight the need to promote a critical view on data literacy, where teachers should be able to access, assess and use data (Deahl, 2014;

Shreiner, 2017), being aware of the implications of using data, understanding it as a cultural text that has both an origin and a role in social, political, economic and cultural settings (Loukissas, 2019; Pangrazio & Selwyn, 2018).

Finally, the last section of the findings responds to the fourth research question (*How do teachers view the role of data in implementing Cátedra de la Paz?*) where three challenges for using and integrating data into *Cátedra de la Paz* were identified: the accuracy and availability of data, teachers' skills and students' motivation. Following the findings in relation to both teachers' understanding of data and the challenges they face, two actions are deemed necessary.

First, reliable and relevant data should be made accessible and shared with teachers. In this sense, an opportunity can be found in open data, defined as public information that can be freely accessed, used and shared by citizens (Zuiderwijk, Janssen, & Davis, 2014). Open data could promote learning and experimentation by working with real-world data, that are being used at the same time by researchers, governments, entrepreneurs or policy-makers, promoting contextualized research and learning activities and supporting students "informational, statistical, scientific, media, political, and critical-thinking skills" (Davies, Walker, Rubinstein, & Perini, 2019, p. 97). Colombia has an open data portal (www.datos.gov.co) that is regulated by Law 1714 of 2014 (Ministerio de TIC Colombia, 2019), and that has over 1800 datasets (Ministerio de TIC Colombia, n.d.). Links between these already existing resources and teaching practices should be promoted, as long as they are relevant and contextualized for educational use (Gebre & Morales, 2018).

Second, teachers' data literacy needs to be promoted and supported in order to encourage informed-dialogues and decision-making in the classroom. Furthermore, the

discussed misunderstandings of the possibilities and use of data in education must be addressed in order to promote informed and contextualized conversations among the students. Accordingly, including data literacy as part of teacher training has been shown to be an efficient way to promote an integral, ethical and critical view of data and its importance (Kippers, Poortman, Schildkamp, & Visscher, 2018; Mandinach, Friedman, & Gummer, 2015; van der Scheer, Glas, & Visscher, 2017). This data literacy training should not only address teachers' misunderstandings of data, but must encourage teachers' abilities to collect data with the students, which has proven to promote informed-dialogue and civic engagement among learners (Deahl, 2014).

Overall, these results show the need to reframe for teachers in Colombian schools what it means to be a citizen today, especially in relation to the new possibilities offered by technologies and information. In this sense, these findings are a call to promote new and critical perspectives on literacy in relation to *Cátedra de la Paz*, where it is evident that there is an urge to be critical in the way they tell and read the world based on data, where "reading the world always precedes reading the word, and reading the word implies continually reading the world" (Freire & Macedo, 1987, p. 23). This is summarized by Livingston, Couvering and Thunim, when they say: "Technologies never stand still and, therefore, nor do the literacies associated with their use" (2008, p. 104). Furthermore, data as a subject of this study and understood as a cultural text (Pangrazio & Selwyn, 2018) that could promote civic engagement (Williams, 2012) should be included in this integral view of literacies and citizenship in Colombia.

6.1. Limitations

The study, following a survey-design approach with mostly qualitative data, has some limitations in its design and implementation. One of these limitations comes from

the web-based survey, where answers to open-ended questions were short, which made it hard in some cases to understand what teachers intended to say. For example, the short answers of the teachers that conveyed the wide range of views about the concept of data were sometimes not clear, making it necessary to dig deeper of their understandings of it, and in many cases showing a clear lack of knowledge about how the term 'data' was framed in the study. This was addressed in the interviews, where it was possible to get greater insight about teachers' views and perceptions. Another limitation of the study comes from the lack of context on the teachers' view of Colombian history, politics and cultural background. These variables could have provided greater insight into their responses. It is recommended that in future research this background information is included.

6.2. Future research

Cátedra de la Paz is an under-studied educational initiative in Colombia, with most of the publications around this topic being master's theses and theoretical discussions, while its implementation has been rarely analyzed. If it is to be expected that Colombia designs relevant and efficient programs that support citizenship skills and the promotion of a peace culture, further research must be done around this.

One specific item that must be further studied are the teacher practices around *Cátedra de la Paz*. While there is an existent community of practice that compiles significant experiences of teachers (<https://pazatuidea.org/wordpress/>), it is necessary to do it under a systematic approach, focusing not only on the variations of the teacher practices in different contextual settings, but its replicability in other classrooms.

Related to the previous point, further research on the contextual factors that determine the implementation of *Cátedra de la Paz* must be done. For example, the

implementation in the capital of Colombia, Bogotá, is most likely to be different than it is in the analyzed region in this study. Furthermore, analysis of *Cátedra de la Paz* in rural schools, that were severally affected by the armed conflict in the country, should be a priority as well.

Finally, research in the needs and possibilities of data use in this context should be done, especially in two settings: First, around the availability, use and evaluation of resources and strategies to integrate data in teaching practices, including but not exclusive to open data. Second, around how data literacy could be promoted in teachers, by proposing scenarios of training, supporting their practice.

6.3. Conclusion

Rafael Grasa, a jurist and academic from Spain who was involved in the post-conflict talks in Colombia, said that while making a peace process usually lasts between two and five years, building peace takes no less than ten or fifteen (2014). In this context, *Cátedra de la Paz* by itself will not end violent conflicts, but it is an essential piece to build a culture of peace and citizenship in Colombia on the long term. This study aimed to analyze how teachers understand and put into practice this course, with the goal of providing information to support and improve its implementation.

The results of this study show the wide variation of views and practices that are taking place around *Cátedra de la Paz*, in an area as small as the surrounding urban area of Medellín, in Antioquia. Teachers' responses are a reflection of the complexity of the conflict in Colombia, and how this context has translated into the educational practices of secondary schools in the country. Following this, further research must be done to understand how, from this process, a long-lasting effort to build a culture of peace could be achieved.

On the other hand, Colombia cannot remain stuck on the challenges of the 20th century but needs to start to create strategies that integrate the complexities of the past conflict of the country and the current global issues. In this scenario, the use of data in relation to *Cátedra de la Paz* could help to develop students' awareness and active citizenship. Teachers must see data as a cultural text that promotes informed dialogue and the empowerment of students to the vast amount of information that is available, including their own data. In this sense, designing an intervention that includes data literacy should include data that fits the goals and needs of the community and the course.

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Appendix A. Survey

Online version in Spanish: <http://websurvey.sfu.ca/survey/331273456>

1. Name: _____

2. Name of the school you teach: _____

3. Grades you teach:

1___ 2___ 3___ 4___ 5___ 6___ 7___ 8___ 9___ 10___ 11___

4. E-mail: _____

5. Have you taught or joined a project of *Cátedra de la Paz* in your school?

___ Yes ___ No

6. What is the name of the project? _____

7. Which of these categories describe better the project you are involved with in *Cátedra de la Paz* in your school? Select as many options as you want

___ Peaceful resolution of conflicts

___ Prevention of bullying

___ Political participation

___ Projects with social impact

___ Diversity and plurality

___ Protection of the cultural patrimony

___ Historical memory

___ History of peace agreements

___ Sustainable use of resources

___ Protection of the natural resources

___ Justice and Human Rights

___ Moral dilemmas

___ Life projects and risk prevention

8. How long have you been implementing this course?

___ Less than 1 year

___ Between 1 and 2 years

___ Between 2 and 3 years

___ More than 3 years

9. For you, what is *Cátedra de la Paz* about?

10. Please describe the expected outcome and relevance of the course for your students

11. What kind of teaching strategies do you use in the course? Please describe the kinds of teaching methods you use to enact your views of the peace course.

12. How often do students work in individual / group projects in this course?

Never	Seldom	About Half the Time	Usually	Always
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13. What kinds of data do you use as part of your teaching practice in the peace course?

14. How comfortable are you about using data in your teaching?

Not at all	Very little	Somewhat	To a great extent	Completely
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15. How frequently do you use data in your teaching?

Every day	Once or twice a week	Once a month	Several times in a month	a few times in a semester
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16. What kinds of data do students use in their learning?

17. To what extent do you believe you have achieved the expected outcomes?

Not at all	Very little	Somewhat	To a great extent	Completely
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Why? _____

18. What are the challenges you encounter when you are trying to teach the course with data?

19. Which of these resources are sources of data for teachers and learners in the course? Select as many options as you want

- Textbooks Governmental guidelines
 Webpages Videos
 Others. Which one? _____

20. What role do you see for data literacy in developing active citizenship in students?

Appendix B. Guide for interview

Time of interview: about 20 minutes

Date:

Place:

Interviewer:

Interviewee:

Position of interviewee:

Description of the project:

Questions:

1. What courses and grades have you been teaching?
2. How long have you been teaching *Cátedra de la Paz*?
3. How would you describe your school surroundings? What are the biggest problems your community face?
4. How does you reflect on the peace process?
5. How has this shape your approach to Catedra de la Paz?
6. What is your project of *Cátedra de la Paz*?
7. What do you understand the course *Cátedra de la Paz is about*?
8. What is the goal of the course in your project?
9. How do you implement your view of Catedra de la Paz? What teaching strategies do you use?
10. Give me examples of it.
11. What do you think students should learn to be active citizens in Colombia?
12. What do you think is the role of data in this vision?
13. What kind of data do you use in your teaching?
14. What benefits do you think data have to promote citizenship in students?
15. What challenges have you faced when implementing *Cátedra de la Paz*? What kinds of support do you need to implement *Cátedra de la Paz with data*?

Appendix C. Translations

Section 5.1.1.

English	Original (Spanish)
“Recognize conflicts and their consequences nationally and internationally based on history and its processes” [004]	Reconocer conflictos y sus resultados nacional e internacionalmente, a partir de la historia y sus procesos
“[The students] sought to know the history of the country marked by pain to recognize a sense of hope and viability of peace” [017]	Se busca que conocieran la historia patria marcada por el dolor para reconocer un sentido de esperanza y viabilidad de la paz.
“Learn to value themselves and have a sense of belonging” [034]	Aprendan a valorarse y tener sentido de pertenencia
“Allow recognition [by the students] as part of society” [024]	Que permitan reconocerse como parte de la sociedad
“[Students] think that everyone has to have pity of them, and that the world has to feel sorry for them” [024]	Creer que todo el mundo les tiene que tener pesar y que el mundo les tiene que tener lástima.
“Children have had to live [with] many things because they do not escape the national reality. We are the house that welcomes children who, when they leave the institution, are often victims of the conflict” [016]	Los niños han tenido que vivir muchas cosas porque no se escapan a la realidad nacional. Somos la casa que acoge a niños que cuando salen de la institución son muchas veces víctimas del conflicto que se vive.
“We wanted the students to have a life project that would allow them to live healthily in community, to be trained as citizens of the world, taking care of the environment, contributing positive aspects to [their] family” [015]	Se buscó que los estudiantes tuvieran un proyecto de vida que les permitiera vivir sanamente en comunidad, que se formaran como ciudadanos del mundo. Cuidando el medio ambiente, aportando aspectos positivos a su familia.
“Capable of constructing their own, critical and autonomous thoughts; that are recognized as a fundamental part of a society” [036]	Que sean capaces de construir pensamientos propio, crítico y autónomo; que se reconozcan como parte fundamental de una sociedad
“Until recently the students did not know the forms of democratic participation within the democracy project” [029]	Hasta el corto momento los estudiantes no conocían las formas de participación democrática dentro del proyecto de democracia.
“We have a corrupt political class, a political class that has no remedy” [010]	Tenemos una clase política corrupta, una clase política que no tiene remedio

English	Original (Spanish)
<p>“There are many armed groups, which determines a lot of the context in the institution” [006]</p>	<p>Hay muchos grupos armados, lo que determina mucho el contexto de mi institución educativa</p>
<p>“The school environment was horrible, [to the extent that] students threw themselves from the window” [005]</p>	<p>El ambiente escolar era horrible... los estudiantes se tiraban desde la ventana</p>
<p>“You could say that from the 47 children who are attending my class, those from... complete family structure and that they get along well, are about 10, maybe. The rest are from completely dysfunctional families, they are families where the mothers work and the dads work, there are many separated families, there are many who live with a partner who is not the father (...) And you see that the most problematic children are those who have more problems in their houses. Although you would like the school to be a free space, that is a lie, you cannot leave the problems of your life outside, neither as a teacher nor as a student” [026]</p>	<p>Se podría decir que de 47 niños que están asistiendo, hay... de estructura familiar completa y que se la lleven bien, hay unos 10, si mucho. De resto son familias completamente disfuncionales, son familias donde las mamás trabajan y los papás trabajan, hay muchos separados, hay muchos que viven con una pareja que no es el papá (...) Y uno ve que los niños de mas problemática son los que tienen más problemática en el aula. Aunque uno quisiera que el colegio fuera un espacio libre, eso es mentira, uno no puede dejar los problemas de su vida por fuera, ni como profesor ni como estudiante</p>
<p>“Awaken interest in participation in the construction of peace processes from the personal, family, school, neighborhood and city levels” [007]</p>	<p>Despertar el interés por la participación en la construcción de los procesos de paz tanto desde el ámbito personal, familiar, escolar, barrial y de ciudad.</p>
<p>“The relevance for the students is that they, within the society, will generate peace dialogues that will be taken to the family environment” [010]</p>	<p>La relevancia para los estudiantes es que ellos dentro de la sociedad generarán diálogos de paz que fueran llevados hacia el entorno familiar.</p>
<p>“It is expected to internalize the concept of peace in each of the participants in the project and deeply impact all members of the academic community, generating a change of attitude that improves coexistence within the institution and achieves a transformation in the actions of each one, with respect to the rights and freedoms of oneself and of others” [016]</p>	<p>Se espera interiorizar el concepto de paz en cada uno de los participantes en el proyecto e impactar profundamente en todos los miembros de la comunidad académica generando un cambio de actitud que mejore la convivencia al interior de la institución y que logre una transformación en el actuar de cada uno con respecto a los derechos y las libertades de si mismo y de los demás.</p>
<p>“The purpose was for the students to take ownership of Colombian history” [017]</p>	<p>El propósito era que los estudiantes se apropiaran de la historia colombiana</p>

Section 5.1.2.

English	Original (Spanish)
"The students learn to recognize their emotions and process them successfully in the midst of everyday conflicts" [040]	Que los estudiantes aprendan a reconocer sus emociones y tramitarlas exitosamente en medio de conflictos cotidianos
"In the face of conflict there are several ways of response: to attack, to flight or the solution. We have worked with the boys this; they evaluate when in their attitudes they are responding to the conflict in what way" [012]	Ante el conflicto hay varias formas de respuesta, y que son tres: la de ataque, la de huida y la de solución. Hemos trabajado con los muchachos eso, que evalúan cuando en sus actitudes están respondiendo al conflicto de qué manera
"There were fights all the time, you could not teach, there was no possibility of dialogue, you could not stay calm for 5 seconds, there was no concentration, there was no disposition, and above all there was no belief in education or in the possibility of the future" [005]	Había peleas todo el tiempo, no se podía dar clase, no había posibilidad del dialogo, no podían quedarse calmados ni 5 segundos, no había concentración, no había disposición, y sobretodo no había creencia en la educación ni en la posibilidad del futuro.
"Today the boys grow up according to the place where they live, and families around here are very dysfunctional, and all that is learned from their homes" [009]	Que los muchachos hoy crecen de acuerdo con el lugar donde viven, y las familias están siendo muy disfuncionales, y todo eso se aprende es el hogar
"There are many indigenous groups, and now there is also a lot of immigration of Venezuelans. That makes it very difficult to relate in the community, and there is evidence of discrimination" [006]	También hay muchos grupos indígenas, y ahora también hay mucha inmigración de venezolanos. Eso hace que sea muy difícil relacionarse en la comunidad, y que se evidencie la discriminación que hay
"Children displaced by violence" [026]	Tenemos niños desplazados de violencia
"A pretty tough community. Because there are people who come and leave, come and leave. There are very few who are properly from here" [010]	Esta comunidad es una comunidad bastante dura. Porque es gente que lleva y se va, llega y se va. Son muy pocos los que son propiamente de acá
"Integrating the community organically, and that they do not see that as a problem if not as a way of interacting with other cultures" [006]	Se trata entonces de integrar la comunidad de manera orgánica, y que ellos no vean eso como una problemática si no como una forma de interactuar con otras culturas.
"Aware of the importance of respecting themselves and others" [014]	Concientizar a los estudiantes sobre la importancia del respeto de si mismo y hacia los demás.
"They can work better in a group. The classroom becomes more friendly" [005]	Pueden trabajar mejor en grupo. El aula se hace más amable.
"Thinking about <i>Cátedra de la Paz</i> was a process of thinking about how to	Pensar la Cátedra de la Paz, fue un proceso de pensar como transformar el

English	Original (Spanish)
transform the classroom, but at the same time of thinking about the armed conflict” [005]	aula, pero a la vez cómo pensar el conflicto armado
“What we see daily, what we see in everyday life is that conflicts are solved by means of shouting, insults, physical aggression, and what is wanted is totally the opposite. I think that there was a very important bet to teach young people these alternative methods of solving conflicts” [003]	Lo que vemos en lo cotidiano es que se solucionen los conflictos por medio de gritos, de insultos, de agresiones físicas, y lo que se quiere es totalmente lo contrario. Pienso que ahí se hizo una apuesta muy importante para enseñarle a los jóvenes esos métodos alternativos de solucionar los conflictos.
“The project that we did was born as an anti-bullying project. It was the first thing we thought, which was to create a website that promoted the prevention of bullying. Then we thought that the issue of bullying had a lot to do with the topic of coexistence and how we were able to establish relationships with others based on the previous experiences that we brought from our families, from our homes. And we realized that these influences, which were part of our lives, were mediated by the environment, by the social situation we were living in the country and the neighborhoods, that our experiences are not alien to everything that surrounds us” [016]	El proyecto que nosotros hicimos nació como un proyecto anti-bullying. Fue lo primero que pensamos, que era crear una página que promoviera la prevención del bullying. Después pensamos que el tema del bullying tenía mucho que ver con el tema de la convivencia y de la relación que nosotros lográbamos establecer con los demás partir de las experiencias previas que traíamos desde nuestras familias, desde nuestras casas. Y nos dimos cuenta de que esas influencias, que hacían parte de nuestras vidas, estaban mediadas por el entorno, por la situación social que estábamos viviendo en el país y de los barrios, que nuestras vivencias no son ajenas a todo lo que nos rodea

Section 5.2.1.

English	Original (Spanish)
“Making theater performances so that everyone can see how conflicts are resolved” [002]	Hacer teatro, para que todos miren como se resuelven los conflictos.
“That is what gets the students attention, that moves them a lot” [024]	Eso es lo que más les llama a los estudiantes, eso los mueve mucho
“When the contest opened, we expected to receive 60 or 70 stories, but the number of stories that were received exceeded all our expectations, and all the logistics we had designed. When the contest became so big, we went to the Ministry of Education and they supported us. The Personería de Bello also participated. We did awards by categories	Cuando el concurso se abrió esperamos recibir 60 o 70 cuentos, pero la cantidad de cuentos que se recibieron superaron todas nuestras expectativas, y toda la logística que habíamos diseñado. Cuando el concurso se volvió tan grande ya fuimos a Secretaría de Educación y ellos nos apoyó, la Personería de Bello también participó con nosotros. Hicimos

English	Original (Spanish)
because students of all ages participated. We did workshops to prepare the students to write their story, and they were given the task of not only writing their story, but to try to write it well” [016]	una premiación, por categorías porque participaron estudiantes de todas las edades. Hicimos talleres previos para preparar a los estudiantes sobre cómo escribir su cuento y que ellos se dieran a la tarea de, no solamente escribir, si no intentar escribir bien.
“We are working specifically with the alternative methods of conflict resolution; we are going to start explaining each one of the strategies. They participate, answer questions, do workshops, do different activities so that they understand the methods of conflict resolution well” [003]	En este momento estamos trabajando específicamente los métodos alternativos de resolución de conflictos, ya vamos a empezar a explicarles cada una de las estrategias. Ellos participan, responden preguntas, hacen talleres, hacen diferentes actividades para que ellos comprendan bien los métodos de solución de conflictos
“Raises the situation between two boys who have a conflict because one of them got a new bike, then went with a classmate who already had a bicycle to take a ride, and then the one with the new bicycle leaves to the care of his companion the bicycle because he had to enter the school to do something. And when he arrived, his partner had been careless, and he realizes that his bicycle is destroyed. That will generate a conflict between the two. Then, as a result of that situation, we make the children to analyze it, think about what happened (...). They reflect, dialogue, and then present to the rest of the group” [012]	Plantea la situación entre dos chicos que tienen un conflicto a raíz de que uno de ellos consiguió una bicicleta nueva entonces se fue con un compañerito suyo que ya tenía una bicicleta a dar una vuelta, y entonces el de la bicicleta nueva dejó al cuidado de su compañero la bicicleta porque él tenía que entrar al colegio a hacer algo. Y cuando llegó, su compañero se había descuidado y se da cuenta que su bicicleta está destrozada. Eso va a generar un conflicto entre los dos. Entonces a raíz de esa situación ponemos a que los chicos la analicen (...) Reflexionan, dialogan, y después la presentan al resto del grupo
“That's where you begin to know them. A boy arrives, for example, and says ‘teacher, I just saw [another student’s] house, they beat and mistreat him’, and you say ‘ah, that’s the reason’. And that allows you to be more receptive to the child, because sometimes what they need is for you to be close [to them] without judging” [026]	Y ahí es que uno empieza a conocerlos. Y llega por ejemplo otro muchacho y dice “profesora, es que si usted viera en la casa de aquel como le pegan y lo maltratan” y uno dice “ah, con razón”. Pero eso le permite a uno ser más receptivo al niño, porque hay veces lo que necesitan es que uno esté cerca sin juzgar
“You have to bring them in a dynamic way where another reality is built and they can question, from that other reality, (...) the issues directly [related to] the conflict” [005]	Hay que traerlos de una manera dinámica donde se construya otra realidad y tu puedas cuestionar, a partir de esa otra realidad, cuando vas a trabajar ya los temas directamente del conflicto

English	Original (Spanish)
“As a final product, they made a socialization of a didactic booklet with preschool children, wanting to show them how to avoid discrimination. Preschool children were also very receptive” [006]	Como producto final fue una socialización de una cartilla didáctica con niños de preescolar como para ir encaminándolos a ellos en esto de que no haya discriminación, entonces los niños de preescolar también muy receptivos.
“We talked about the river La Mina. As I know little of this community (...) I asked the students to investigate about it. So, what did I do? I made them observe and talk to the oldest people around” [009]	Hablamos del río La Mina. Entonces como yo poco sé de esa comunidad, yo les preguntaba a los jóvenes. Entonces yo qué hice, los puse a que fueran a investigar a los más viejos de por acá

Section 5.2.2.

English	Original (Spanish)
“In the institutions the dynamic with <i>Cátedra</i> is very diverse because the law itself opens a framework of flexibility and tells you to name it as a subject, but when you are going to implement it, it gives you the possibility to include it within the content and the structure of how it is going to be done” [005]	En las instituciones la dinámica con la <i>Cátedra</i> de la Paz es muy diversa, empezando porque la propia ley te abre un marco de flexibilización, y te dice que la nombre como asignatura, pero cuando la vas a incluir te da un marco de posibilidad de incluirle dentro de los contenidos y a la estructura de cómo se va a hacer
“ <i>Cátedra de la Paz</i> was given last year as a course (...), this year was given as a project” [028]	<i>Cátedra</i> de la Paz el año pasado se dio como área, (..) Este año fue como proyecto
“The most difficult thing, this year, is not having <i>Cátedra</i> as a course in the school” [010]	Lo más difícil, este año, es no tener la <i>Cátedra</i> de la Paz como un área del colegio
“What happens now? Are we still teaching <i>Cátedra</i> or do we not have to keep teaching it? Does the process continue, are we going to take it into account for the evaluations? Or do we not take it into account? Do we take it out of the system, do we keep it in the system? Do we keep it in the institutional educational project or not? Nobody knows” [024]	¿Y qué pasa?, ¿seguimos dando <i>Cátedra</i> de la Paz o no la tenemos que seguir dando?, ¿continúa el proceso, nos lo van a tener en cuenta para las evaluaciones?, ¿o no lo tenemos en cuenta?, ¿lo sacamos del sistema, no lo sacamos del sistema?, ¿lo mantenemos en el PEI o no? Nadie sabe
“Project began when <i>Cátedra de la Paz</i> did not yet exist, nor the subject of peace was fashionable (...), it was prior. I think that was an indicator that we really needed to talk about this issue within the institutions” [016]	Este proyecto inició cuando la <i>Cátedra</i> de la Paz aún no existía, ni en el tema de la paz se había puesto aún de moda (...) Fue previo. Creo que eso fue un indicador de que realmente se necesitaba hablar de este tema dentro de las instituciones.

English	Original (Spanish)
"I did not have time, it was very hard to find the time to be able to work, we left some things uncomplete" [006]	El tiempo, se veía muy disminuido para poder trabajar, dejábamos las cosas empezadas
"If there is no assigned teacher, with a time and a budget, you can't really see what could be achieved in Cátedra" [005]	Si no hay un profesor asignado, con un tiempo y un presupuesto, realmente se podría ver lo que se alcanza a hacer con esa Cátedra.
"The challenge was the beginning because in <i>Cátedra de la Paz</i> there was not even the plans of the course" [003]	El reto fue el inicio, porque en Cátedra de la Paz no se tenía ni siquiera los planes del área.
"The Ministry sent such general guidelines that you can do anything, or you can do nothing, and you [can] still achieve what they say" [026]	El Ministerio mandó unas directrices tan generales que usted puede hacer cualquier cosa y puede hacer nada e igual cumple
"We learned that the project has to be born from a collective construction, it cannot be led by a single person, but it has to be born of the conviction of an entire community so that a project like this works" [016]	Nosotros aprendimos que el proyecto tiene que nacer de una construcción colectiva, no puede ser liderado por una sola persona, si no que tiene que nacer del convencimiento de toda una comunidad para que un proyecto como este funcione
"The most difficult thing is getting institutional support" [028]	Lo más difícil es conseguir el apoyo institucional
"Very complex issues to address" [007]	Asuntos muy complejos de abordar.
"When we are talking about peace and coexistence, we are talking about something very complicated" [016]	Cuando estamos hablando de paz y de convivencia estamos hablando de algo muy complicado.
"It is easier if they tell me 'in <i>Cátedra de la Paz</i> you have to work on the independence of Colombia, then you have to work on peace agreements, then wars in Colombia, then you can work on the whole part of self-esteem, diversity'" [024]	Es más fácil si a mi me dicen "en Cátedra de la Paz tienes que trabajar independencia de Colombia, luego tienes que trabajar los acuerdos de paz, luego las guerras en Colombia, Se puede trabajar toda la parte de autoestima, diversidad"
"As a subject, it must be evaluated. And in this matter, it is very hard. If you speak of responsibility and solidarity; how do I say that a student does not respond to the values of peace? It is that sometimes the words are so complicated" [026]	Lastimosamente como asignatura hay que evaluarla. Y en esta materia es muy malo. Entonces uno habla de responsabilidad de responsabilidad y solidaridad. ¿Cómo digo yo que un alumno no responde a los valores propios de la paz? Es que hay veces las palabras son tan complicadas

English	Original (Spanish)
<p>“Engage in learning processes with the responsibility that they could assume” [036]</p>	<p>No se comprometen en los procesos de aprendizaje con la responsabilidad que podrían asumir</p>
<p>“The difficult thing is the lack of motivation, disposition for everything that has to do with the academic” [012]</p>	<p>Lo difícil es la falta de motivación, de disposición para todo lo que tiene que ver con lo académico</p>
<p>“Sometimes they get aggressive, they are kids who sometimes are mistreated at home, they are very abandoned at home because Mom works, and they stay all day just watching their house” [003]</p>	<p>Hay veces se les sale la parte agresiva, son chicos que hay veces en la casa son maltratados, son muy abandonados en su casa porque mamá trabaja y él se queda todo el día solo cuidando la casa</p>
<p>“You talk to them about [the relevant topics], but do we really understand what the peace agreements were, what was done or how were they made? Then, if you do talk about it, what do if I do not have it clear, how am I going to get to explain it to them, what if they ask me a question, what do I say?” [024]</p>	<p>Uno les habla de eso, pero ¿realmente entendimos cuáles fueron los acuerdos de paz, ¿qué se hizo o cómo se hicieron? Entonces uno llega a hablarle a los estudiantes de ese tema y se dice “si yo no lo tengo claro, ¿cómo le va a llegar a ellos?, ¿si me hacen una pregunta yo qué digo?”.</p>
<p>“We did not design a serious process and ended up doing sporadic and isolated activities without real impact on the students” [020]</p>	<p>No se diseñó un proceso serio y se terminaron haciendo actividades esporádicas y aisladas sin verdadero impacto en los estudiantes</p>
<p>“Sometimes even the teachers themselves are a barrier, where the traditional teachers say ‘ah, if this boy did not come to class, then he has to fail my course’. Then the boy has to choose to say that he either fails the subject or he will participate in the project to rehabilitate himself” [028]</p>	<p>Y hay veces hasta los mismos maestros somos una barrera, donde los maestros tradicionales dicen “ah, si este muchacho no me vino a clase, entonces tiene mi materia perdida”. Entonces el muchacho tiene que optar por decir que o pierde la materia o me voy a participar en el proyecto para rehabilitarme.</p>
<p>“In most schools it is done to comply with the law, not because it is an integrated process” [005]</p>	<p>En la mayoría de los colegios eso se hace para cumplir la ley, no porque sea un proceso integrado</p>
<p>“[The teachers] sometimes saw it as an obligation” [024]</p>	<p>La veíamos en ocasiones como una obligación</p>
<p>“institutional limitations that are established by the directives, both in terms of time and resources for the project, as well as the censorship of methods and topics, the fact that most schools are a transversal project of topics, does not allow more than doing billboards and 2 silly work guides per year” [005]</p>	<p>Las limitantes institucionales que se establecen desde las directivas, tanto en el tiempo y recursos para el proyecto, como la censura, métodos y temáticas, el hecho que Cátedra sea en la mayoría de los colegios un proyecto transversal de temas no posibilita más que hacer carteleras y 2 guías tontas de trabajo al año</p>

Section 5.3.

English	Original (Spanish)
"Of utmost importance to know the reality [and] act effectively" [006]	De suma importancia para conocer la realidad y actuar con eficacia
"Helps [the students] to better see the dimension of the issues addressed" [023]	Los ayuda a ver mejor la dimensión de los temas a tratar
"Thanks to [the data] we can create hypotheses that seek to improve the indices" [032]	Gracias a estos podemos crear tesis que busquen mejorar los índices evidenciados en lo que se pretende rastrear.
"Inputs or information that [they] use for [their] teaching practices" [001]	Los insumos o la información que utilizo para estas prácticas de enseñanza
"If the students can visualize the data with the reality, it will give them a veridic and dimensional vision of the analyzed data and situations" [026]	Si los estudiantes pueden visualizar los datos con la realidad, les dará una visión verídica y dimensionaría los datos y situaciones analizadas
"I think the data keeps [the students] grounded [and] with neutrality" [016]	Yo pienso que los datos le dan aterrizaje, neutralidad
"Create a critical conscience" [010]	Crear una conciencia critica
"Statistical analysis of a reality, corresponding to the teachers and students to assume the role of analyzer and comparator" [025]	Análisis estadístico de una realidad, correspondiendo a los docentes y estudiantes asumir el rol de analizador y comparador
"Teach students to be very critical of the data they are given (...). Really, many times [the media] make up the statistical data so that it comes out what they want to. So, it is very important to teach them to be critical of that: what we are seeing, is it real?" [024]	Enseñarles a los estudiantes a que sean muy críticos frente a esos datos que se les dan (...) Realmente muchas veces maquillan los datos estadísticos para que salga lo que uno quiera. Entonces es muy importante enseñarles a ellos a ser críticos frente a eso, realmente lo que estamos viendo, ¿es real?
"All the data that is offered by the various media that account for the social reality in which it is immersed" [007]	Todos los datos que son ofrecidos por los diversos medios de información que dan cuenta de la realidad social en la que se esta inmerso.
"Yesterday in class I mentioned that the military hospitals in Colombia, last year after the peace agreements, had 3 or 5 people hospitalized (...). About 3 or 4 years ago, we had those hospitals with more than 3 thousand wounded combatants. I only gave that information to the boys yesterday. I am not an expert in data, nor do I handle all the precise data, but I hear a lot of news. And that	Ayer en clase les mencioné que los hospitales militares en Colombia, el año pasado después de los acuerdos de paz, llegaron a tener 3 o 5 personas enfermas, me imagino que por enfermedad y no por cuestiones de violencia. Hace unos 3 o 4 años, teníamos esos hospitales con más de 3 mil combatientes heridos. Nada más ese dato se los di ayer a los muchachos. Yo no soy un experto en los datos, ni manejo todos los datos precisos, pero

English	Original (Spanish)
news told us that information, and I told myself that this information was interesting and the children said "no, it is true, somehow the peace agreements have positively impacted the country", even though there are questions about the policies that do not agree with the peace agreements (...) But the data does not lie" [003]	escucho muchas noticias. Y esas noticias nos dijeron esa información, y yo me dije que ese dato era interesante y los chicos decían "no, es que sí es verdad, de alguna manera los acuerdos de paz han impactado positivamente al país", por más de que hay cuestiones políticas que no quieren estar de acuerdo con la paz (...) Pero los datos no mienten
"Institutional, regional and national guidelines and reports" [004]	Directrices e informes institucionales, regionales y nacionales
"Information provided by state institutions" [008]	Información proporcionada por instituciones estatales
"Official government sources of the Havana peace agreements" [033]	Fuentes oficiales del gobierno de los acuerdos de paz de la Habana
"Santillana <i>Cátedra de Paz</i> " [009]	<i>Santillana Cátedra de Paz</i>
"Didactic material" [022]	Material didáctico
"Results of workshops" [016]	Resultados de talleres
"Surveys" [029]	Encuestas
"We did two large surveys and made several small focus-groups and treated them as sources of information (...). All that is information that bases our project" [016]	Nosotros hicimos dos encuestas grandes e hicimos varios grupos de opinión pequeños y tratamos como fuentes de información (...) Todo esa es información que fundamenta nuestro proyecto.
"Usually I always try to recommend different sources of information from search engines, in which I find concrete and truthful information: Official pages of non-governmental organizations, databases, magazines, web quest, etc." [001]	Por lo general siempre intento recomendar fuentes de información diferentes a buscadores, en los que yo encuentre información concreta y verídica: Páginas oficiales de organizaciones no gubernamentales, bases de datos, revistas, web quest, etc.
"Referring to what happened with the peace process" [037]	Haciendo referencia a lo ocurrido con el proceso de paz.
"Conformation of the country during the conquest, the colony and independence and then how this influences the conformation of the guerrilla groups of the country" [010]	La conformación del país durante la conquista, la colonia y la independencia y luego como esto influye en la conformación de los grupos guerrilleros del país

English	Original (Spanish)
<p>“Students use historical data to talk about what they have learned in class” [010]</p>	<p>Los estudiantes usan datos históricos para hablar de lo aprendido en la clase</p>
<p>“These days I also heard another fact, they told me that, in the municipality of Granada, Antioquia, of 1800 people who lived in the 90s, they received many bombings from the guerrilla, and in that town, there were 5 people living in the hardest of violence. The others migrated or died. Look, that is a fact, one that causes a very deep impact. How will a town of 1800 people be left with 5 people alone? That is very sad. I gave this data to the students and they said, "my God, that town is a ghost" [003]</p>	<p>En estos días también escuché otro dato, me decían que, en el municipio de Granada, Antioquia, de 1800 personas que vivían en los años 90, cuando recibieron muchos bombardeos de la guerrilla, y en ese pueblo quedaron 5 personas viviendo en la época más dura de la violencia. Los demás migraron o murieron. Mira que es un dato que de una te causa un impacto muy profundo. ¿Cómo un pueblo de 1800 personas va a quedar con 5 persona sola? Eso es muy triste. Yo se lo di a los muchachos y ellos dijeron “dios mío, ese pueblo quedo fantasma”</p>
<p>“Number of conflicts presented during the week [and the] disciplinary processes that occur during the term” [040]</p>	<p>Número de conflictos presentados durante la semana. Procesos disciplinarios que se presentan en el periodo</p>
<p>“You could then have more information about the students, which would make them more of a person for us. (...) If we could do it closer to their lives, I think that statistical information would be more understandable” [026]</p>	<p>Si pudiéramos tener más información de los estudiantes, eso los haría más persona para nosotros (...) Si pudiéramos hacerlo más cercano a la vida de ellos, yo creo que sería más entendible esa información estadística.</p>
<p>“Data I have consulted on the internet, taken from news and newspapers” [025]</p>	<p>Las cifras y datos las he consultado en internet, tomados de noticias y periódicos</p>
<p>“Those provided by the health and police offices” [026]</p>	<p>Los proporcionados por la secretaria de salud y la policía.</p>
<p>“Results of own surveys” [016]</p>	<p>Resultados de mis propias encuestas</p>
<p>“For the special case of the armed conflict in Colombia, we have decided to use all the Historical Memory production carried out by the CNMH before 2017” [001]</p>	<p>Para el caso especial del conflicto armado en Colombia, hemos decidido utilizar toda la producción de Memoria Histórica que llevó a cabo el CNMH antes del 2017</p>

Section 5.4.

English	Original (Spanish)
"Little documentation of the country's history" [017]	Hay poca documentación de la historia patria
"There is not an institution responsible for grouping the different existing data on the conflict in the country" [008]	No hay una institución encargada de agrupar los diferentes datos existentes sobre el conflicto en el país
"Consult more viable sources, because we usually find them on the Internet, [but] sometimes they are not what you consider them to be" [024]	Consultar fuentes más viables, porque uno normalmente las que encuentra en internet, en ocasiones no son las que uno considera que son
"The data should be as close as possible to their personal reality and sometimes the data or national realities occur in contexts very different from those experienced by children" [043]	Los datos deben ser lo más cercano posible a su realidad personal y en ocasiones los datos o realidades nacionales se dan en contextos muy distintos a los vividos por los niños
"Very interesting that it would be data about the country, because sometimes we talk about the wounded of the Second World War, or another pile of external data, and we do not know the data of our country" [003]	Muy interesante que sea sobre los datos del país, porque es que a veces hablamos de los heridos de la segunda guerra mundial, u otro montón de datos externos, y no conocemos los datos de nuestro país.
"Data is difficult for us, the teachers, because we do not handle it accurately" [003]	Los datos son difíciles es para nosotros, los maestros, porque no los manejamos con exactitud.
"That one of my weaknesses is statistics, and normally when we talk about data, we use a lot that statistical part" [024]	Yo creo que una de mis debilidades es la estadística, y normalmente cuando hablamos de datos se usa es mucho esa parte estadística
"More training is needed in all this, by the universities, by the municipalities and by the state so that we can address the difficulties. We lack resources" [012]	Falta más formación en todo esto, por parte de las universidades, por los municipios y el estado para que podamos abordar las dificultades. Nos faltan recursos
"need support from the Ministry of Education and the local offices in terms of training, because many times teachers are not trained to do data analysis. It is something that we have to learn on our own" [016]	Pues se necesita apoyo de la Secretaria de Educación y del Ministerio en cuanto a la capacitación, porque muchas veces los docentes no estamos capacitados para hacer análisis de información. Es algo que tenemos que aprender por nuestra propia cuenta.
"Disposition. They like to come to school, they feel safe here. It is harder to take the step to the academic, to study, to think	Es la disposición. A ellos les gusta venir al colegio, acá se sienten seguros. Es más duro dar el paso a lo académico, al

English	Original (Spanish)
about the issues in a more conceptual way” [012]	estudio, a pensar los temas de manera más conceptual
“Are very afraid of mathematics. They are afraid of anything they see with numbers. Then you have to start to remove that fear of mathematics from them and to see that mathematics is not only equations” [024]	Ellos les tienen mucho pavor a las matemáticas. Ellos cualquier cosa que ven con números les asusta. Entonces uno tiene que empezar a quitarle ese temor a las matemáticas a ellos, y a que vean que la matemática realmente no siempre son ecuaciones.
“What happens is that the information is very fragmented. For example, the DANE has information, but not real life data, such as to make a population study and know who lives with mom and dad, who works, who have televisions ... That is a statistic that would be more in line with real life of them, and it would be very useful. As to know who has a computer to do the homework. If we could manage that type of strategy, to do it with data from our own context, it would be very good” [026]	Lo que pasa es que es muy fragmentada la información. Por ejemplo, el DANE tiene una información, pero no de la vida real, como para hacer un estudio poblacional y saber quién vive con papá y mamá, quiénes trabajan, quienes tienen televisores... esa es una estadística que sería más acorde a la vida real de ellos, y sería muy útil. Como para saber quien no tiene un computador para hacer la tarea. Si pudiéramos manejar ese tipo de estrategias, de hacerla con datos de acá propios, sería muy bueno.
“It is a challenge that students handle data” [003]	Es un reto que los estudiantes manejen los datos
“That students are very skeptical about the data and do not consider them useful” [035]	Los estudiantes son muy escépticos sobre los datos y no los consideran útiles