

CONCEPT MAPS FOR QUALITATIVE ANALYSIS - THE "TRACES" OF HIGH SCHOOL IN GRADUATES FROM PATAGONIA

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Abstract. This paper is part of the production of our research team, directed by Mg. Carmen Palou de Mate¹, located at the College of Education, in the National Comahue University, in Patagonia, Argentina. Our current project is entitled: "What does High School teach? A study of its traces through the voices of its graduates." We have interviewed more than 40 high school graduates from Patagonia using a semi-structured interview format. We will present an experience in which, as the first step in the qualitative analysis process, we used concept maps as a tool that allowed us to structure and systematize the interviews and to facilitate our communal reflection process, as researchers. We worked with eight of the interviews to construct concept maps from the bottom up, i.e. from the most specific (the sayings of a high school graduate) to a more general level in which we looked for the concepts that each of the quotes suggested as significant. This allowed us to have a clear visual representation of each interview, which was in turn integrated into a larger concept map that reflected all eight interviews. Then, at the most general level, we were able to find theoretical work that may explicate or reflect the essence of the concepts found in the interviews. We will illustrate this process as we present some of the preliminary findings of the interpretation process we have conducted so far.

1 Introductory Words

This paper is part of the production of our research team, directed by Mg. Carmen Palou de Mate¹ located at the College of Education, in the National Comahue University, in the Patagonia, Argentina. It is our team's aim to make a contribution to the active literature on best practices in Education. In the last years, several lines of inquiry have been constructed that address these practices. These productions are based on educational reforms and on social transformations (Diaz Barriga 1995; Gimeno Sacristán & Perez Gomez, 1985), and all point to the need for a renewed understanding and more current interpretations of the teaching practice.

We have developed our research work from a General Didactics perspective (Contreras 1990), considering also the critical and socio-cognitive literature (Camilloni, Barco & Litwin, 1996; Camilloni, 2007). For more than a decade, our research team has focused on understanding teachers' actions and their links with the craft of teaching (Tom, 1984). All of our inquiry projects (Litwin et al, 2003; Litwin et al, 2006) have specifically focused on identifying best practices (Chaiklin & Lave, 2001). Our current project is entitled: "What does High School² teach? A study of its "traces"³ through the voices of its graduates." It is our goal, then, to learn about what former high school students refer to when they are asked about the traces that the high school experience has imprinted in them (Bruner, 2003).

More than 40 graduates from the High School Level of the Alto Valle de Río Negro, in Patagonia, Argentina have been interviewed. The intentional sample consisted of public day school graduates who had graduated at least 5 (five) and not more than 10 (ten) years before the interview was conducted. The graduates that were interviewed constituted a socially and culturally heterogeneous group, which adds richness and depth to our study. We are currently starting the qualitative analysis of the data collected on the field, by means of semi-structured interviews. The final report is expected two years from now.

In these pages, we present an experience in which, as the first step in the qualitative analysis process, we resorted to concept mapping as a tool to synthesize and organize the interviews and to understand and discover the relationship among the concepts that emerge from the interviews. We also realized that the process of constructing the maps facilitated our engaging in a communal reflection process as researchers both as regards how to reflect the qualitative data on the map and as regards the theoretical framework used to attempt to

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² The Argentinean educational system is structured by law 1420 (passed in 1882), which determines that there must be three levels of compulsory education: Kindergarten, Primary and High School (or Secondary). At the High School level, students receive the knowledge and certification required for them to attend the university or superior level. High school in Argentina comprises 5 years of instruction. Students start High School at an average age of 12 or 13 and generally graduate when they are 17 or 18.

³ The word "traces" is used as a metaphor for the impact or influence of the High School experience that still remains in its graduates. For further discussion of this concept, see Calvet, Chrobak, Pastor and Sobrino (2008).

explicate our findings. We will illustrate this process as we present some of the preliminary findings resulting from the interpretation process we have conducted so far.

2 Our Experience

In our search for methodological tools for the interpretation and analysis of the data gathered by means of semi-structured interviews, our team decided to conduct a pilot experience with the use of concept maps, in order to assess their value in assisting the task at hand. According to Novak and Gowin, "a concept map is a schematic device for representing a set of concept meanings embedded in a framework of propositions" (1984). Thus, they are a useful tool for one of the challenges of qualitative research "tak[ing] voluminous amounts of textbased data and reduce that data to a manageable form without losing the embedded meaning" (Daley, 2004).

Daley goes on to suggest that "the maps help researchers to maintain the meaning of the interview within the data analysis. Often when looking at an interview transcript, the richness of the participants meaning can be lost. Because of the interconnections displayed on a concept map, this meaning can be maintained. Transcripts tend to represent the spoken language in a linear fashion, whereas the maps represent the interview data in an interconnected and hierarchical fashion. This representation is more analogous to the way we think and to the way we actually discuss concepts in an interview format.

The starting point of our experience was, then, the interviews themselves. Therefore, we decided to construct concept maps from the bottom up, i.e. from the most specific (the sayings of a high school graduate) to a more general level. We selected eight interviews at random and read them a number of times, selecting those quotes that we deemed central and meaningful towards shedding some light onto the "traces" of high school in its graduates. We focused on the interviewees' answer to the question: "What did High School teach you?" We looked for the concepts that each of the quotes suggested as important and meaningful, in terms of synthesizing the essence of the citation (please see fig. 1 for a sample concept map). This allowed us, as we had expected, to have a clear and rich visual representation of each interview.

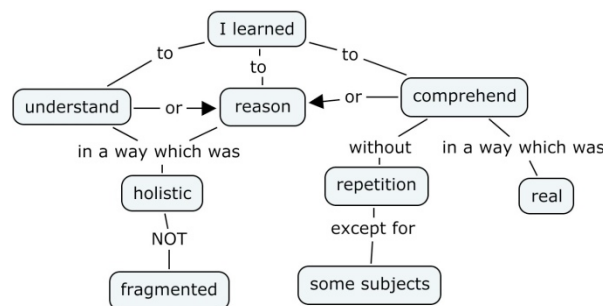


Figure 1. Map of one of the interviewee's answer to the question: "What did High School teach you?"

When all the interviews were mapped, we constructed a new concept map that integrated the most important concepts in each of the eight maps. A rich debate was generated when we had to decide which the most significant quotations or concepts were. Thus, this collaborative concept mapping process helped us to engage in communal reflection about the reasons and, often, the unquestioned assumptions behind our construction of the map. It became clear to us, then, that the maps represented not only the sayings of our interviewees, but also the group's reflection process both as regards the gathered data and the theoretical framework of our research work. Some of the fundamental issues that were debated at length as a result of the concept mapping process were "what do graduates refer to when they speak about the 'traces' left by High School?" or "which concept or key word best reflected a particular quotation".

These first steps in the analysis allowed us to construct a map which encompasses an important number of concepts, reflecting the richness of all eight interviews. In addition, this map helped us to see which concepts were central for our work, since we were able to see that some concepts were linked to several examples, which meant that they were mentioned by several graduates.

We then passed on to constructing the most general level of this new map. We were able to find theoretical work that may explicate or shed light onto the essence of the concepts found in the interviews. This stage was one of collaborative reflection and analysis of our theoretical framework, as reflected by the concepts in the map. For instance, we noticed that the graduates interviewed constantly referred to aspects of *metacognition*

(Mateos, 2001) when talking about the learning capitalized in the High School level. The interviewees used words such as *reflection*, *relating*, *understanding*, which led us to resort to Ausubel's work (1968) as a useful perspective to illuminate the sayings of our interviewees. This pointed to the hypothesis that perhaps the "trace" of High School could be explicated in terms of *meaningful learning*. We decided to construct a map (figure 2) to explore this possibility and test the potential of this theory for our research project.

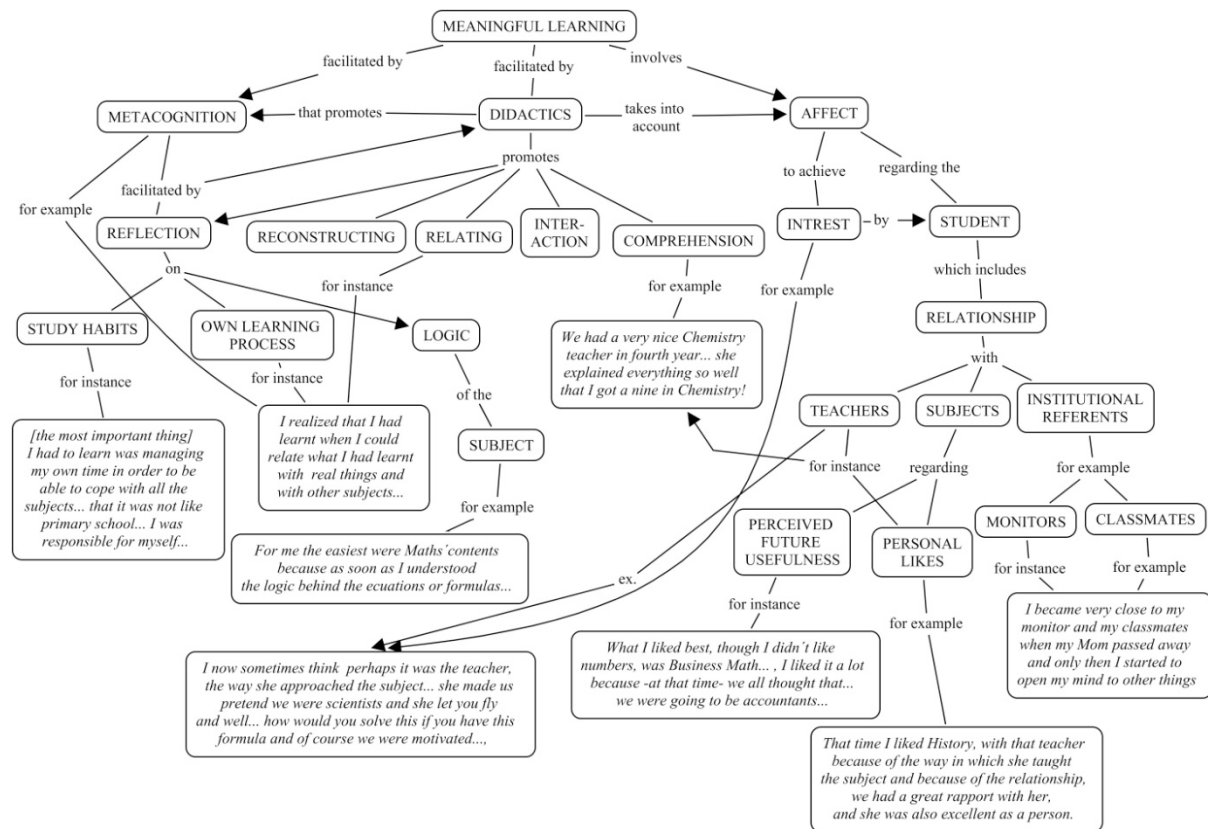


Figure 2. Concept map that reflects the integration of all eight interviews

As the reader may appreciate, Ausubel's did prove to be a potent theory, in that it comprises several concepts that are significant for the learners. Notice, as an example, that the map emerged as divided –visually– into three important areas, reflected by the concepts: *metacognition*, *affect* and *didactics*, two of which reflect the fundamentals of the author's work. Naturally, the learners also referred to concepts like didactics, which are more directly illuminated by other theoretical works in Education. This concept mapping process, then, facilitated our revisiting of the theoretical framework used for the study and allowed us to see the potential of some of these concepts to interpret the narrative by high school graduates about the traces left by high schools.

This methodology allowed us to recognize teaching practices -such as responding to students' interests, having a close relationship with the learners, helping them see relate the topics learned to their own experience and explicating the logic of a discipline- that enhance the educational process and result in meaningful learning. The learning the participant graduates describe was meaningful to such an extent that it is present as a trace of high school in them even as long as ten years after graduation. Our findings, then, point to good teaching practices that may not necessarily reflect novel actions or ideas. However, they are valuable not because of their novelty but because of their power to transcend and have such a powerful and lasting impact on the students.

3 Conclusion

We have presented an experience in which, as the first step in the qualitative analysis process, we used concept maps as a tool to structure and systematize the sayings of high school graduates as regards the educational traces imprinted in them by high school. We constructed concept maps starting from the most specific level; i.e. the interviews done in the field, working up to a more general level; i.e. the concepts that each of the quotes indicated as central. We then integrated the maps constructed into a new concept map, which provided us with a

clear visual representation of the most significant concepts in each of the eight interviews. Finally, the most general level in the map consists of theoretical work that illuminates the concepts found in the interviews.

The described experience led us to understand that using concept mapping for qualitative analysis allows for both a process of inquiry and a process of communal reflection not only upon the gathered data but also upon the theoretical framework used. This proved to be a fruitful methodology in that it provided a clear visual representation of the data, through which we were able to discover the most central concepts. At a later stage in our research work, we believe that we may be able to propose new theoretical constructs, by means of further analysis and integration of the concept maps.

References

- Ausubel, D. P., Novak, J. D. and Hanesian, H. (1968) Educational Psychology. A Cognitive View. Holt, Rinehart and Winston, Inc.
- Bruner, J. (1997) La educación, puerta de la cultura. Madrid: Visor.
- Bruner, J. (2003) Fábrica de Historias. Buenos Aires: Fondo de Cultura Económica.
- Camilloni, A.; Barco, S.; Litwin, E. (1996) Corrientes Didácticas Contemporáneas. Bs. As. Paidós.
- Camilloni, A. (2007) El saber Didáctico. Paidós. Bs. As.
- Calvet, M., Chrobak, E., Pastor, L. & Sobrino, M. (2008) Buscando y pensando las huellas de la escuela media. Unpublished paper.
- Carli, S. (2005) Educar: ese acto político. Del Estante. Bs. As.
- Chaiklin, S. & Lave, J. (Comp.) (2001). Estudiar las prácticas. Amorrortu. Bs. As.
- Contreras, D. (1990) Enseñanza, Currículum y Profesorado. Akal. Madrid.
- Daley, B. J. (2004) Using concept maps in qualitative research. In Cañas, A. J. ; Novak, J. D. & González, F. M. (Eds.) Proceedings of the First International Conference on Concept Mapping. Pamplona, Spain.
- Diaz Barriga, A. (1995) Didáctica-Aportes para una polémica. Aique Bs.As.
- Gimeno Sacristan, J. y Perez Gomez, A. (Eds.) (1985) La enseñanza: su teoría y su práctica. Akal. Madrid.
- Jakson, Ph. (1990) La vida en las aulas. Aique Bs.As
- Litwin, E.; Palou De Mate, C.; Calvet, M.; Herrera, M.; Marquez, S.; Pastor, L.; Sobrino, M. (2003): Corregir: sentidos y significados de una práctica docente.– Colección educación. General Roca. Publifadecs – UNCo
- Litwin, E.; Palou De Mate, C.; Calvet, M.; Herrera, M.; Pastor, L.; Chrobak, E.; Sobrino, M. (2006): Evaluar la propia enseñanza. Los escenarios de la escuela media. General Roca. Publifadecs – UNCo
- Mateos, M. (2001) Metacognición y Educación. Aique, Bs.As.
- Novak, J. D., & Gowin, D. B. (1984). Learning How to Learn. New York: Cambridge University Press.
- Tom, A. (1984) Teaching as a moral craft. Logman. New York.