

The Impact of the PROFILES Project in Italy

Liberato Cardellini

Italian coordinator of the project PROFILES

An indication of the state of education in a country is given by the Programme for International Student Assessment (PISA) international survey. Unfortunately, according to this study, the status of health of education in Italy is not very good. There are many factors that make modest impact of the teaching on students' learning. In what follows will be shown the positive impact of the application of the philosophy of the PROFILES project in some schools in Italy. (Bolte et al., 2014; Holbrook & Rannikmäe, 2014)

The philosophy of the PROFILES project and the Continuous Professional Development

This great adventure for me began in December 2010, at the 1st Consortium Meeting in Berlin. To the meeting I had the impression of being one of the few not to have previous experience of working with teachers in middle and high schools. I felt overwhelmed by the enormous amount of work waiting for me. Back in my college the prospect appeared to me even less motivating when I was told that I would not receive any compensation for my work in the project. I had two options: withdraw from the project or accept the challenge. Given my interest in the world of education and the opportunity to improve the standard of preparation of the students who did arrive at my university, I embarked on this adventure. My first task was to become familiar with the philosophy of the project and adapt it to the situation and conditions of the schools in Italy. (Holbrook, 2011)

I drove the belief that the most important factor that determines the improvement of standards in education is the teacher. This is also a key aspect of the project PROFILES that places great emphasis on the process of the teachers Continuous Professional Development (CPD). (Simon, 2012; Hofstein et al. 2012) Another key aspect of the project is the active involvement of students in the processes of teaching and learning. In all presentations of the project PROFILES have been highlighted two strategies in the classroom: learning and visible reasoning (Ritchhart & Perkins, 2008; Ritchhart et al., 2011; Hattie, 2012; Krechevsky, et al. 2013)

In addition to working in the workshops, three methods and significant aspects of education have formed the backbone of the CPD: cooperative learning (Cardellini, & Felder, 1999), the use of summaries and concept mapping (Novak & Gowin, 1984; Cardellini, 2004), and problem solving (Mayer, 1992). A feature of the CPD in Italy is that after three joint meetings, professional development has often focused on the solution of the difficulties that the teacher encountered when he tried to put into practice for example the cooperative learning method. The CPD was conducted face to face: Personal contacts were also held with e-mail, phone, and social networks.

In the cycles of implementation this strategy must be planned: *“Individual teachers will have different, and often multiple, learning needs, will be in different learning stages, at different points along the professional continuum, and this will be true at every points during the implementation of your plan.”* (Loucks-Horsley and al. 2010, p. 164)

Teachers and schools involved

During the four years and half of the project life, more than 1400 teachers in Italy have been informed of the existence of the project PROFILES. Teachers from more than 60 schools were involved in the PROFILES project. For many teachers, the news came with the request to participate in the Delphi study. More than 600 teachers and school administrators know the philosophy and objectives of the project. Teachers involved in the project belong to three regions: Marche, Umbria and Piedmont, as reported in the figure.



Figure 1. Distribution of schools where one or more teachers are involved in the project

Several school administrators know about the project and support the involvement of their teachers. More than 350 teachers have been involved in the CPD program and have attended one or more meetings. In the Marche region, 26 schools are involved in the province of Ancona: 4 school administrators and 108 teachers (8 elementary, 11 junior high school, 14 vocational school and 69 in licei and technical institutes). 15 schools are in the province of Macerata: 10 school administrators and 146 teachers (34 elementary, 54 junior high school, 15 vocational school and 43 teachers in licei and technical institutes). In the province of Ascoli Piceno, 5 schools are involved in the project: 3 school administrators and 40 teachers (6 junior high school, and 34 teachers in licei and technical institutes). 2 schools in the province of Fermo; 2 school administrators and 19 teachers in technical institutes. 4 schools are also involved in the province of Pesaro and Urbino: 2 school administrators and 14 teachers (2 junior high schools and 12 in one licei and one technical institute). Only one school in the province of Perugia: a scientific high school; the school administrator and 6 teachers are involved in the project.

In the Piedmont region there are 10 schools involved: 5 in Turin and 5 in the Cuneo province, mainly in Fossano. The school administrator in Fossano and 26 teachers (3 elementary, 21 junior high school, and 2 teachers in a technical institute). In Turin there are one junior high school teacher, and 6 teachers in high schools.

Dissemination activities

The PROFILES Guidebook for CPD Providers (Holbrook, 2011) and 14 modules of the project PARCEL have been translated into Italian and made available to teachers. The Italian titles:

- Usiamo troppa plastica?
- In tribunale si può confidare nella macchina della verità?
- L'acqua del lago può essere resa potabile?
- Come programmeresti la campagna pubblicitaria ideale per il nuovo singolo di Rihanna?
- Coltivazione delle piante – Il terreno fa la differenza?
- Come mantenere nel modo migliore un ponte metallico?
- Mi piacciono i dolciumi! E continuano a dirmi di non mangiarli!
- Lara (16 anni) è incinta

- Latte: Conservare al fresco
- Incidente stradale: di chi è la colpa?
- KieWi&Co.: Viaggio nel mondo microscopico “Che cosa accade ai cubetti di ghiaccio nella mia bevanda?”
- KieWi-Co:Sostanze nella vita di tutti i giorni. “Da dove vengono le bolle che si formano dalle pastiglie effervescenti?”
- Qual è il sapone migliore?

About 650 flyers were distributed in the presentations of the project and 11 newsletters were sent to over 1400 people on the list. Some conferences have been organized: 3 local and 2 national conferences of the project. 2 conferences took place in October 2013 with the participation of Prof. Ingo Eilks (Bremen University) and 3 conferences took place in September 2014 with the participation of Prof. Miia Rannikmäe, University of Tartu, Estonia, and Prof. Jack Holbrook, Past President ICASE e Visiting Professor, University of Tartu. In March 2015, on the occasion of the visit of Prof. Eugene L. Chiappetta (Dept. of Curriculum & Instruction, University of Houston, Houston, TX, USA) other five conferences were organized, where many teachers presented their experiences (See newsletter #11). Many presentations recorded are visible in the PROFILES site at the URL: <http://www.profiles.univpm.it/node/25>

Some teachers have participated in international conferences with articles and poster presentations: 3 at the 12th International Conference on Chemistry Education (Rome, 2012); 4 at the 1st International PROFILES Conference (Berlin 2012) and 4 at the 2nd International PROFILES Conference (Berlin 2014).

Self-efficacy and leadership

In literature there are many definitions of leadership. In their “The Leadership Challenge” Kouzes and Posner (2007, p. 14) list the five practices of exemplary leadership. A leader,

- Model the way;
- Inspire a shared vision;
- Challenge the process;
- Enable others to act;
- Encourage the heart

Ultimately the leadership is a contribution to making something extraordinary happen. A questionnaire specifically developed to measure self-efficacy has been sent to about 80 teachers among the most involved in the project and 34 filled it. The scale is a nine-level Likert item, from 1 (the minimum) to nine (the maximum). The questionnaire measure four dimensions: the *Efficacy in student engagement* (7.17); the *Efficacy in instructional strategies* (7.46); the *Efficacy in inquiry teaching* (7.15) and the *Efficacy regarding PROFILES* (7.40). In considering these results it is necessary to take into account that the questionnaire was not anonymous. Teachers knew that I would read and made a study of their answers.

There are several evidences of PROFILES teachers involving other teachers in meaningful learning activities. One of the ones I'm most proud as coordinator for Italy is shown in in our newsletter n. 7: "Scienza e arte: un laboratorio creativo. Ovvero: la tintura .. del cavolo" (<http://www.profiles.univpm.it/sites/www.profiles.univpm.it/files/profiles/newsletter/NL-IT-%2007a.pdf><http://www.profiles.univpm.it/sites/www.profiles.univpm.it/files/profiles/newsletter/NL-IT-%2007a.pdf>).

After completing the CPD program, a teacher involved 8 other teachers in a successful project. She also presented this work at the second PROFILES conference in Berlin.



Figure 2. Italian teachers attending the Second International PROFILES Conference in Berlin.

Future developments

Many teachers after knowing the philosophy of the project PROFILES have begun put into practice new ideas and have developed several educational projects to motivate their students. To give visibility to these teachers seems necessary to make a publication in which they will be given the best practices developed.

Another idea was to start an e-book. Will contain the modules developed by teachers and ideas to motivate students. This idea came about as a result of conferences held in San Severino Marche, Perugia, and Fabriano in September 2014. These conferences were attended by Prof. Miia Rannikmäe, University of Tartu, Estonia (Head of Centre of Natural Science Education), and Prof. Jack Holbrook, Past President ICASE e Visiting Professor, University of Tartu. These conferences have raised the enthusiasm of many teachers and the proposal to work on a book that you can then use in the classroom has generated a lot of interest.

The only downside is that the project PROFILES is at an end. During the national conference of Fabriano, several teachers were asked to continue the collaboration. You cannot now stop a process that produced an improvement of the processes of teaching and learning in many schools in Italy.

References

- Bolte, C., Streller, S., Rannikmae, M., Hofstein, A., Mamlok-Naaman, R., Rauch, F. & Dulle, M. (2014). Introduction: about PROFILES. In Bolte, C., Holbrook, J., Mamlok-Naaman, R., & Rauch, F. (Eds.). (2014). *Science Teachers' Continuous Professional Development in Europe. Case Studies from the PROFILES Project*. (pp. 4-15). Berlin: Freie Universität Berlin (Germany) / Klagenfurt: Alpen-Adria-Universität Klagenfurt (Austria).
- Cardellini, L., & Felder, R. M. (1999). L'apprendimento cooperativo: un metodo per migliorare la preparazione e l'acquisizione di abilità cognitive negli studenti, *La Chimica nella Scuola*, 21 (1), 18-25.
- Cardellini, L. (2004). Conceiving of Concept Maps To Foster Meaningful Learning: An Interview with Joseph D. Novak. *Journal of Chemical Education*, 81 (9), 1303-1308.
- Hofstein, A., Katchevich D., Mamlok-Naaman, R. Franz Rauch, F., Dace Namsone, D. (2012). Teachers' Ownership: What Is it and How Is it Developed? In Bolte, C., Holbrook, J., Rauch, F. (eds.). *Inquiry-based Science Education in Europe: Reflections from the PROFILES Project*. (pp. 56-58). Berlin: Freie Universität Berlin.
- Hattie, J. (2012). *Visible learning for teachers*. New York: Routledge.
- Holbrook, J. (2011). *PROFILES Guidebook for CPD Providers: The PROFILES concept*. Estonia: UTARTU.

- Holbrook, J. & Rannikmäe, M. (2014). The Philosophy and Approach on which the PROFILES Project is Based. *CEPS Journal*, 4(1), 9-29.
- Krechevsky, M., Mardell, B., Rivard, M., & Wilson, D. (2013). *Visible Learners: Promoting Reggio-Inspired Approaches in All Schools*. San Francisco (CA): Jossey-Bass.
- Kouzes, J. M. & Posner, B. Z. (2007). *The Leadership Challenge*. Fourth Ed. San Francisco, CA: Jossey-Bass.
- Loucks-Horsley, S., Stiles, K. E., Mundry, S., Love, N., & Hewson, P. W. (2010). *Designing Professional Development for Teachers of Science and Mathematics*. Thousand Oaks, CA: Corwin.
- Mayer, R. E. (1992). *Thinking, problem solving, cognition* (2nd ed.). New York: W H Freeman.
- Novak, J. D., & Gowin D. B. (1984). *Learning How to Learn*. New York and Cambridge, UK: Cambridge University Press.
- Ritchhart, R. & Perkins, D. (2008). Making Thinking Visible. *Educational Leadership*, 65(5), 57-61.
- Ritchhart, R., Church, M., & Morrison, K. (2011). *Making Thinking Visible: How to Promote Engagement, Understanding, and Independence for All Learners*. San Francisco (CA): Jossey-Bass.
- Simon, S. (2012). Effective Continuous Professional Development in Science Education. In Bolte, C., Holbrook, J., Rauch, F. (eds.). *Inquiry-based Science Education in Europe: Reflections from the PROFILES Project*. (pp. 17-24). Berlin: Freie Universität Berlin.