

DEVELOPMENT OF YOUTH PURPOSES IN HIGH SCHOOL: AN ANALYSIS OF A PROPOSAL BASED ON PROBLEM AND PROJECT BASED LEARNING (PPBL)

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Abstract: This article aims to analyze a proposal based on Problem and Project Based Learning (PPBL) for the development of student's purposes of a private school in São Paulo, Brazil. The analysis focused on the work carried out in 2015, with youngsters from the 3rd year of High School, in the construction of prototypes based on areas of professional activity that they wish to follow in the future, with a view to addressing social problems. A total of 92 students (in 40 groups of up to three students) and the tutor were analyzed. As results, it was observed: the area of professional action chosen, the characteristics of the prototypes developed and the engagement of young people in construction of the project. It was found that young people are focused on a restricted number of professions, but the prototypes effectively meet the proposal of social action, with the perspective of the chosen areas. It was also verified the great participation of the students and recognition that the process was beneficial for their formation. We conclude that the PPBL tool, related to the young people's purposes, can be useful to provide reflections about the connections between professional career and ethical behavior in society.

Keywords: Purposes; Problem and Project-Based Learning; Moral Education.

Purpose in youth: the role of the school

Purposes are essential and assume a central role in people's lives (Damon, Menon, & Bronk, 2003; Damon, 2008; Bundick, 2009; Damon & Colby, 2015). They are deeply related to young's identity development (Bronk, 2011), once they promote the direction of their future actions and the motivation and persistence of acting in the present in accordance with their objectives and goals (Bundick, 2011). Bringing the connotation of something permanent in the constitution of the identity of each subject, purpose is reinforced by positive feelings, such as well-being, happiness and fulfillment, and, at the same time, makes the subject resilient in difficult moments, in which supports the motivation and determination to overcome obstacles.

As purposes are intended for both personal fulfillment and for making a difference in the world (Damon, Menon, & Bronk, 2003), there is a need to promote in young people commitment to social causes. As purposes are an organizational principle that leads people to

have a coherent view of their future (Kosby & Mariano, 2011), it engages young people in their present actions, leading them to perceive everyday activities, such as study, significantly.

For the development of purposes, it is necessary personal effort, curiosity, commitment and, in particular, the support and guidance of friends, relatives and other adults of different educational environments in which young people are involved (Moran, Bundick, Mailin, & Reilly, 2012). The school plays a central role in the purposes development, insofar as it acts in the construction of identity and future goals (Damon, 2008; Bundick & Tirri, 2014; Damon & Colby, 2015). According to Damon (2008, 2009), purpose can be discovered in class during school activities and encouraged by any school member who knows and understands the student.

Once purposes are based on values and feelings (Pátaro & Arantes, 2014; Pinheiro & Arantes, 2015), school needs to contemplate the expression and recognition of emotions - both positive and negative - for each young person regarding himself and his interpersonal relationship. Educational actions that aim to achieve these aspects need to be practiced at school, with the goal of building values, healthy interpersonal relationships, dialogue and self-knowledge (Moreno Marimón & Sastre, 2002; Puig & Martín, 2007; Puig, 1996, 2007).

We emphasize that, since purpose is a construction related to identity, it is necessary that the school strategies focus on the student's self-knowledge about his values and feelings, making him understand what is most important to him and how he feels about it. Teacher should act as a guide, strengthening the autonomy of the learner in the choices about his future, based on problems and situations experienced (Savery & Duffy, 2001; Decker & Bouhuijs, 2009; Araújo, Fruchter, Garbin, Pascoalino, & Arantes, 2014).

Problem and Project-Based Learning

School should play a central role in the development of young people purposes and, for this, it needs to use active learning methods (Duch, Groh, & Allen, 2001; Rué, 2009; Araújo, 2011), based on principles of ethics and citizenship. In this way, it becomes possible for young people to pursue, as an integral part of their identity formation, social engagement in purposes that provide them well-being and satisfaction in making a difference in the world.

The Problem-Based Learning (PBL) perspective fits this need, since it is referenced in a student-centered perspective, focusing on experimental and investigative learning (Barrows, 2000; Savery & Duffy, 2001). PBL starts from a real and contextualized problem, which involves the student directly in its resolution, making him motivated responsible for the process,

promoting a contextualized and integrated learning, and contributing to the construction of skills that will be important for the lifelong learning (Barrows, 2000; Hmelo-Silver, 2004; Souza & Dourado, 2015). In PBL, some steps must be followed: formulation, identification and analysis of the problem; hypothesis building; empirical and theoretical research; application of knowledge to solve the problem; and sharing the findings (Hmelo-Silver, 2004).

One way to work on the PBL methodology is through projects (Araújo, Arantes, & Filho, 2016). Thus, Problem and Project-Based Learning (PPBL) assumes the same theoretical-methodological perspective, motivating students and increasing their activity, but focusing even more on collaborative and cooperative work, through learning in small groups to solve the problem, as well as leading to a more refined methodological organization to the construction of a final report. The teacher, in this methodological line, becomes a facilitator (Barrows, 2000; Hmelo-Silver, 2004), participating in the whole process, either in the presentation of the problem or in the follow-up of each stage, and helping students to build strategies, as well as providing a favorable environment for group work and the exercise of creativity.

The methodological treatment of the PPBL seems to be very pertinent in developing purposes in school. As purposes are individual constructions, produced in the interchange with the others and in contexts of personal experience, they require the students engagement and the support of the tutor, in collaborative procedures that can lead them to search the conceptual and procedural contents of their purposes.

The PPBL proposal

We analyzed the experience of a school that applies PPBL in order to develop the purposes of High School students, leading them to a greater self-knowledge, the recognition of their values and feelings, as well as the need for engagement in present actions, through the possibilities of acting in the future.

The school analyzed is a private institution, of São Paulo, Brazil. It has 2.100 students, of which 360 are in the High School (14 to 17 years), age group used for the application of the program. The families of the students have monthly income between 4 and 10 minimum wages, classified as class C, according to the Brazilian Institute of Geography and Statistics (IBGE). According to data collected with the families in 2015, 67% of the parents have university level, 21% high school, and 12% complete or incomplete elementary education.

The methodology is guided by the learning process as a construction carried out by the subject in interaction with other agents and the environment. The school understands that

learning must be meaningful, based on the needs and possibilities of the student. The curriculum of High School meets the requirements of the Brazilian Ministry of Education (MEC), following the National Curricular Parameters of Secondary Education, with disciplines in the following axes: Languages, Codes and their Technologies; Natural Sciences, Mathematics and their Technologies; and Human Sciences and Technologies. Students attend regular classes within a 5-hour period, and those who wish may engage in sports and cultural activities offered by the school on a contractual basis.

In High School, there are 30 teachers. These teachers, for the most part, also work in other high schools, especially in public schools, at other times, including the night time period. Many of these teachers work three shifts a day (morning, afternoon and evening).

The school develops a program of moral education with high school students. The program, called Professional and Ethical Guidance (OPE), takes place in the three grades of this segment, in 50-minute weekly classes, plus extracurricular activities such as field trips, university visits and participation in forums of professions.

The program is based on the development of psychomoral skills (Puig, 1996, 2007), which are related to purposes development:

- Self-knowledge: ability to form the self representation, to know one's own feelings, values, desires and needs, in order to integrate biographical experiences to purpose, producing personal coherence. Examples of activities are the production of autobiography and the interview about purpose.
- Empathy: ability to recognize feelings, needs and desires of others, seeking the perception of other points of view and integrating different visions in their purposes. It is an example of activity the roleplaying exercise.
- Moral judgment: ability to analyze morally conflicting situations and define a position, through the use of principles that guide the organization of thought. It is necessary to judge exemplary and non-exemplary conduct that can serve as an inspiration or as a counter value. Conflict resolution is an activity used to develop this ability.
- Emotional and sensitivity skills: ability to perceive one's feelings, detect conflicts and feel affected by them. Developing these capacities is fundamental for young people to identify what can and can not make them happy. Examples of activities include the research about happiness and the analysis of postings on social networks where people report their feelings.

- Social participation: the ability to recognize the integration potential between personal projects and the problems that occur in the public sphere, in order to seek conscious and responsible interventions. We will describe below an example of this activity.

We carried out a more detailed analysis of the activity that involves the social participation of the students and that occurs in the third year of the High School course. In this activity, a project is developed, using the PPBL. Taking into account that the students had the opportunity to reflect and draft a purpose in the first two years, the objective of this project is to deepen in problems of the chosen professional areas, making the students recognize research and scientific methodology as ways of solving problems, as well as perceive their social performance from the chosen career perspective.

The students are divided into small groups (up to three members), according to the chosen professional areas. It is necessary the existence of points in common among careers, even if there are divergences between them, allowing both the integration of knowledge from various sources and the approach of each area. Next, we'll detail the steps of the project.

1. Survey of society's issues

In groups, students perform the *brainstorming technique* to raise what social problems affect them and that could be analyzed from the perspective of the chosen area. The tutor accompanies the groups, instigating reflection, giving suggestions and making notes. Students search openly on the Internet and in books on the issues to argue for or against their choice to carry out the work.

2. Research plan

The group chooses one of the problems, based on the discussion about the previous survey. The tutor accompanies and leads the groups to reflect on the possibilities of the chosen theme. From the guidance of the tutor, the students close a specific problem from the chosen subject and elaborate a research plan.

3. Data collection and analysis

Under guidance of the tutor, the groups develop their data collection tools and define the participants and contexts of the study. They then apply the various instruments and proceed to the treatment and analysis of the data collected.

4. Theoretical deepening

Already involved with the research problem and with the perspective of data analysis, the students approach to theoretical sources that help them in solving the delimited problem. The

sources need to integrate knowledge, necessarily going through studies in the field of the chosen areas.

5. Proposal to solve the problem

With the data of the theoretical and empirical investigation, the students elaborate a proposal of the problem solution, within the possibilities of each chosen professional area. Students are not asked to actually apply the solution, but a prototype that is feasible and can modify the reality found.

6. Production of the final report

Students write a final report, according to the rules of the Brazilian Association of Technical Standards (ABNT). They are encouraged to develop their writing and supported by the tutor throughout this process.

7. Evaluation and sharing results

The students present their project to the community and are evaluated by a board of examiners, composed by a school teacher, a specialist in the area, and the tutor. At that moment, they report the process and present the prototype. The members of the board ask questions that must be answered by the students. At the end, the members make an evaluation, considering the report and the final presentation.

Besides this evaluation, there are two other instruments: the evaluation of the tutor, who considers the process of the group; the self-evaluation and evaluation of the group, in which, in addition to evaluating, group members discuss a mark for each one according to their participation in the process.

For an even greater socialization of the projects, an event is held, called the OPE Forum, in which the groups expose, to the students of the 1st and 2nd years of High School, how the project was done and how it interfere in their purposes.

Some results

We analyzed the projects developed in 2015 and collected data to verify the effectiveness of the program. The tutor and 92 students from the 3rd year of High School participated in the process, divided into groups of up to three members (totalizing 40 projects).

First of all, we raised the chosen professional areas and the number of projects developed. We elucidate each axis with an example problem and a prototype developed by students.

Table 1.

Number of projects per professional area and examples of problems and prototypes

Professional area	Number of projects	Problem example	Prototype
Health (Medicine, Veterinary, Nursing)	9	How does sleep influence the quality of life of young and elderly people?	Campaign to guide young people about the importance of sleep.
Arts (Visual Arts, Fashion, Design, Cinema)	8	What are the stereotypes of women in cinema?	Blog to discuss the stereotypes about the female role in cinema.
Technology	5	What contents of social life are exposed on the internet by people?	Application that helps in the prevention of embarrassing postings in social networks.
Engineering	5	How to minimize the environmental impact of pre-salt exploration on the Brazilian coast?	Pre-salt exploration safety project to minimize environmental impacts.
Architecture and Urbanism	4	How can urban arborization influence the quality of life of Sao Paulo residents?	Arborization project for the streets of the neighborhood where the school is located.
Law	4	What are the effects of the Maria da Penha law on the denunciations of physical abuse by women?	Campaign to publicize the Maria da Penha law and prevention of physical abuse of women.
Marketing and Advertising	4	What are the pros and cons of the influence of advertising on infant feeding?	Advertising campaign aimed at children and young people, warning about the risks of excessive consumption of fast food.
Cooking	1	How to develop a food truck restaurant that serves the distant neighborhood of the Sao Paulo?	Development of a food truck, with design of a car and elaboration of a menu.

Note. Maria da Penha is a Brazilian law created in 2006 to protect women that suffer physical abuse.

Analyzing the areas and quantity of projects developed, most of the young people turn to Health, Art, Technology and Engineering, still presenting significant numbers in the areas of Architecture and Urbanism, Law and Marketing and Advertising. There is a great concentration of themes in certain areas, which brings us some important evidence of analysis. It is seen that the options of the young are restricted to certain professional choices, that can come from social or familiar pressure and even from the school. There are many career possibilities today, but

young people are still restricted to "prestigious" professions, understanding that they will have greater professional success in them. We can point that the school could have brought more opportunities for reflection to young people about their choices, so that they widen the range of possibilities for their professional careers.

The projects culminated in prototypes that aimed at a real application to solve the problem outlined. Through the examples presented above, the students were able to analyze the themes chosen according to the perspective of the areas, seeing how their possible professions can contribute to society. For Bundick (2009), the youth can turn to projects beyond the self and contribute effectively to a change in the world.

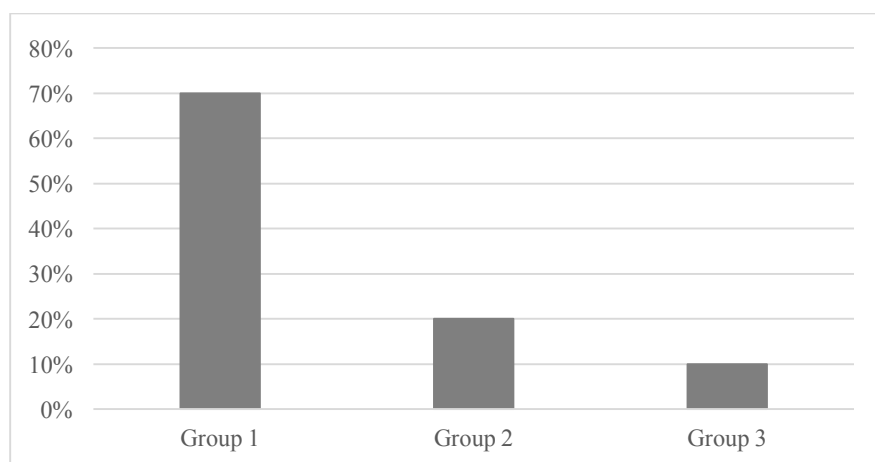
The second step of our analysis goes towards young people's engagement in the prototyping process. We verified that all the groups finished the work in the proposed term or with small delays. However, in terms of participation, we verified that there was a difference in the engagement and effective participation of all components. In this way, we classify the groups into three categories:

- Group 1 - All members of the group participated effectively in the whole process.
- Group 2 - Not all members participated effectively and there were conflicts between members of the group.
- Group 3 - All the members were disengaged in relation to the project.

Below, we present the quantitative results regarding student engagement in the work groups.

Figure 1.

Engagement and effective participation in the projects by groups



It was noticed that the great majority of the students were involved, participating in group 1, in which all participants effectively worked on the prototype construction (28 groups/

70%). We had eight groups in which the members disagreed or there was no real participation of all (20% of the total groups) and four groups that showed no interest and lack of motivation to work (10% of the total groups).

These results indicate that the methodology employed motivates the students in the search of knowledge within the chosen area to solve the proposed problems. It is noticeable that there are still resistant and disengaged students, although they are a minority in the process. This creates conflicts with the other group members (Group 2) or total indifference (Group 3). However, throughout the process, these students begin to value the project developed and its importance for the construction of the purpose.

We follow the final evaluation of the prototypes by the board of examiners. At that moment, we asked the tutor to question the students about the importance of this project for their purposes. All 92 young people, including those belonging to the disengaged groups, assumed that the project was very important for their purposes. The justifications used by the youth were: the project led them to have direct contact with the chosen area, being decisive to reinforce or refute the previous choice; it was a first test of responsibility in researching and carrying out a project with more autonomy, criticism and social engagement; they learned the scientific methodology that will be important for future undergraduate studies; they can make changes in society; and they learned to work in teams and to solve interpersonal conflicts.

It is observed that, even if a portion of the participants (30% of the total) were less engaged or had problems in their participation, at the end of the process all the young people publicly acknowledge that the process of constructing the prototype is beneficial for their purposes, because it gives them the opportunity to think about the future profession as a way of acting in society, as well as having more responsibilities and knowledge about scientific research.

Final considerations

From the results obtained, we consider that the work developed with the students of High School, based on the PPBL methodology, could act significantly in the young people purposes, leading them to find possible solutions to social problems within the professional areas chosen. In contact with the challenges of careers, young people had to work more autonomously, experimentally and critically, which led them to have other perspectives on the future, reinforcing choices or refuting them.

It also highlights the challenge of the group's collaborative work, which presents

difficulties for some young people who still can not succeed in group dynamics and conflict resolution. Young people were able to learn not only content pertinent to their areas of action in the future, but also how to proceed with cooperative work, which is a today's society demand.

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