

“DISCIPLINARY ORIENTING” AT SCHOOL

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Abstract

The vocational development consists of helping the pupil to move his/her first footsteps in the real exercise of freedom, respecting the different stages of his/her development, so that he/she consistently act according to ethical principles and progresses in the correct direction to find an access to new degrees of freedom and responsibility.

In the Academic Years 2011/2012 and 2012/2013 six high school teacher councils of year 4 classes in Palermo have been involved in the project Aracne. Thanks to the collaboration of experts and researchers, they have experimented a vocational development training, through the learning of the disciplinary contents, in order to develop students' essential skills to formulate a career choice.

The present contribution shows the project made by the high school of Humanities "Altavilla", in Palermo, about the way the teachers can develop the ability of planning and the career choice of their pupils, starting from the disciplinary contents taught in the last year of the high school.

Keywords: Career education, metacognition, research, ADVP.

1 CAREER EDUCATION AND METACOGNITION

Making a decision is a complex planning, a difficult process where people must combine expectations, needs, but also concrete possibility to satisfy them. A choice should be a balanced and serious synthesis of a person's wants and makes; in it emotions and rationality should harmonically melt. But it's not always so.

A career is defined as the combination and sequence of roles played by a person during the course of a lifetime. These roles include those of child, pupil or student, citizen, worker, spouse, homemaker, parent, and pensioner, positions with associated expectations that are occupied at some time by most people, and other less common roles such as those of criminal, reformer, and lover.

Career guidance has strong social origins, used by educationalist, social workers to help pupils, particularly those from less socially advantaged backgrounds, make the most of their lives.

Career guidance and counseling in the western world, most notably in the United States (USA), has developed a comprehensive system of theories and intervention strategies in its more than 100 years of history. It began in the years of Frank Parson as a trait-factor approach in the early twentieth century [1] [2], and slowly evolved to become a rather mature discipline today in the twenty-first century with a strong theoretical and empirical base, with the potential to further develop into a more “global” discipline in the years ahead. Indeed, vocational and career related issues are salient across different cultures and nationalities [3] [4].

Career intervention practices are extremely long-standing, as long-standing as vocational guidance practices. Early forms of career intervention, more often than not incorporated as part of psychological guidance analysis, failed to develop because very soon, as early in fact as the 1930s, a new concept of guidance was established based mainly on the diagnosis of aptitudes using different psycho-technical tests. Considerations and research were then directed more towards perfecting methods for assessing aptitudes rather than analyzing the means of enabling a facilitation of the formation process concerning preferences and vocational choices [5].

For many years, researchers believed that young children did not have metacognitive knowledge or skills and that metacognitive instruction was not only a waste of time, but quite possibly detrimental to a child's learning [6].

Metacognition, or self-awareness of one's own thinking processes, is an essential skill in the development of vocational decision-making. Metacognition consists of knowledge of cognition and regulation of cognition. Knowledge of cognition consists of knowledge of one's abilities, knowledge of strategy implementation, and determination of when/why strategy use is appropriate, whereas

regulation consists of “taking action, implementing strategies, and acting on feedback from the knowledge one has” [7].

Gunstone and Baird [8] argue that enhanced and appropriate metacognitive abilities will only be achieved by means of an integrative perspective on metacognition, in which metacognitive training is recognised to be intimately bound up in issues of content and context. Some attempts have been made to teach metacognitive skills apart from the context and content within which they are to be used, in so-called study skills programs. The formulation of metacognition as knowledge, awareness and control of one’s own learning [9].has been most influential in studies in this area, and building on this basic description, this research project aimed to provide a more detailed picture of what “enhanced” and “appropriate” metacognition might mean in a tertiary engineering context. Literature Review.

These metacognitive concepts relate to career development because they require self-appraisal of one’s abilities, the ability to appraise tasks, and the ability to strategize ways to work through a task [10]. The importance of metacognition to career development is emphasized by the research of Symes and Stewart [11] who found a significant relationship between metacognition and vocational decidedness; those who displayed higher levels of metacognitive activity also demonstrated higher levels of vocational decidedness in comparison to those with lower levels of metacognition. In addition, research has demonstrated a relationship between metacognitive awareness and decision-making and the role that metacognitive instruction plays in improving decision-making [7].

Knowing the mental trials that undergo our decisional mechanisms and the operational strategies that the process of choice can make more functional is surely a help to the choice, but also important is the availability of knowledge and suitable information. The necessary condition to go out of a decisional dilemma is to have the satisfactory elements to be able to appraise the real alternatives. Today the alternatives are multiplied because the working panorama is characterized by an increasing complexity, that provokes different changes of activity during the working life of a person.

Among the various methodologies for the development career maturity, at the end of adolescence, we have been proposed the "Activation du Développement Vocationnel et Personnel" (ADVP) conceived at the University of Laval (Québec, Canada) which has received different applications in educational field in Europe. This methodology has been adopted because it allows teachers to run innovative didactic interventions in the form of problems related to the experience of the students and, at the same time, it involved all school disciplines.

The educational-didactic project has been planned with the intent of provoking some professional improvements in the teachers and to contribute to the vocational maturity in the pupils of the last years of secondary school, 1st grade. During the Academic Year 2011-12 the “Altavilla” school teachers created and validated 6 exercises that involved the students for a total of 40 hours. The disciplines involved were Latin, Mathematics, Physics and History of the art.

The didactic experimentation has considered a plurality of coordinated actions and it has allowed the integration between school and university to promote interventions aimed at developing vocational maturity of young people and the acquisition of the necessary prerequisites to face university studies.

2 ACTIVATION DU DEVELOPPEMENT VOCATIONNEL ET PROFESSIONNEL (ADVP) FOR TEACHER DEVELOPMENT

The real beginning of the development of career intervention, as it is currently conceived, can be traced back to Italy during the 1980s, and the availability of the approach: Activation of Vocational and Personal Development (Activation du Développement Vocationnel et Personnel – ADVP), a method perfected by staff at Laval University in Quebec [12],[13] and based on the ideas of Super [14], [15] and Guilford [16]; see also Viglietti [17], [18]. Several convergent factors explain this development, which was considerable and was not completed: the crisis of the psycho-technical model, the widespread adoption of humanist (Rogers) and cognitive (Piaget) approaches in the world of psychology, popularized the image of an active and autonomous individual. Above all, the introduction of continuing vocational guidance along with generalized access to secondary education and the development of individualistic values in all sectors of society was a contributory factor. The unemployment crisis of the 1980s and prevailing instability of the job market contributed to the development of educational concepts in guidance.

In particular, the ADVP model implementing Super's career development theory. Super's research indicated that this important exploratory behaviour is conditioned by an individual's attitudes toward planning and exploring the future. To denote attitudes toward planning the future, Super (1974) coined the word planfulness, which has not yet entered the dictionary although planlessness is defined in several dictionaries. Planfulness means an awareness that educational and vocational choices must be made eventually and an inclination to prepare to make these choices.

Attitudes toward planning and exploration constitute the first half of ADVP model of career development. The other half of the model is comprised of two cognitive competencies involving information and decision making. Informational competence refers to knowledge about work, occupations, and career. Well-developed competence in occupational information suggests that the individual is sufficiently knowledgeable to apply occupational information to self and to begin to crystallize preferences for occupations in a particular field and level. Crystallizing preferences constitutes the first developmental task in the Exploration Stage of a career.

The second competence in the structural model is knowledge of the principles and practice of decision making. Persons with well-developed decisional competence know what to consider in making educational and vocational choices. They apply these decisional principles in making choices that match their interests and abilities to corresponding occupations.

According to this model, persons are mature or ready to make important career choices when decision-making knowledge is supported by an adequate fund of occupational information based on planful exploration. After specifying a choice, the third and final task of the ADVP model is implementing the choice by securing a position in the chosen occupation and working at it for a trial period. This initial trial can be followed by stabilizing in the position or by another trial position, with an eventual zeroing in on a permanent position.

The originality of the method ADVP is in the stimulation of mental abilities involved in the case of developmental tasks such as [12]: exploration, crystallization, specification, realization. Through the stimulation of the inherent mental abilities in the creative categorical, evaluative and implicative thinking for the realization of the exploration, crystallization, specification and realization tasks, the development of the decision making process is promoted through the discovery, classification, evaluation and experimentation steps. According to the ADVP method, teachers built — and later described — some exercises of exploration, crystallization, specification, and execution to improve the students' process of vocational growth exploiting the content of the subjects taught during the school year. The model identifies four developmental tasks that must be attained: exploration, crystallization, specification, implementation/actualization [12], [13].

1. Exploration involves fitting oneself into society in a way that unifies one's inner and outer worlds. This information-seeking behavior transfers the person from occupational daydreams to employment in a job.
2. Crystallization occurs when the four tasks of the growth phase are completed and coalesce with occupational daydreams «into a publicly recognized vocational identity with corresponding preferences for a group of occupations at a particular ability level».
3. Specification of an occupational choice requires the individual to explore deeply to sift through tentative preferences in preparation for declaring an occupational choice. «Translating private vocational self-concepts into public occupational roles involves the psychosocial process of vocational identity formation».
4. Implementation/Actualization requires that the individual makes a choice by converting ideas into actions that make it a fact. Actualizing a choice usually involves completing the necessary training and experiencing trial jobs in the specified occupation.

The usual aims of the ADVP methodology have been re-interpreted in terms of assessable and verifiable objectives and a series of tasks have been created to be harmonically inserted in the teaching/learning activities thought for the class groups involved. In creating the tasks, self-regulation of learning has been considered as a crucial strategy to let students reflect on their cognitive processes.

3 THE RESEARCH

A correct and meaningful teen-ager education should aim to guarantee a great mastery of oneself and to help teenagers develop an autonomous and responsible personality. Therefore, recognizing their

own limits and responsibilities, teenagers are able to make choices suitable to their own possibilities and fit for the context in which it develops him his where they live.

The vocational guidance experimental workshop is extensively based on ADVP. In order to develop the technological support system and workflow scenarios based on the ADVP model, a case study of teachers' and students' professional development was conducted which identified and mapped the areas in the ADVP between the schools and universities, and among the various stakeholders related to the professional teacher development in these organizations.

The course of the research has been centred in a way in which the teachers of secondary school can develop, in their students, the ability of planning and making choices of their own professional future, departing from the contents of the disciplines and using the methodology of "Activation du Développement Vocationnel et Personnel".

The experimental methodology has provided a number of coordinated actions that allowed the integration of the contributions of the school, of the university and of the center of orientation of the university College Arces, to promote interventions turned to the development of the young people career maturity and the acquisition of the necessary prerequisites to face the university studies.

At the research has participated a fourth grade class board that, together with all the other high school involved in the project, has experimented the methodology ADVP which a real career guidance that, through the learning of the disciplinary contents, has promoted the development and the expansion in the students of the essential abilities for the formulation of a realistic formative project post-diploma.

With the research we undertook to achieve the objectives followings:

- a) realize didactic work (through ADVP exercises) that helped the students to acquire a planning methodology, to take a choice rationally founded, to know the university world and to take awareness of their own cognitive and metacognitive abilities;
- b) promote in the students the awareness of their own abilities and knowledges; of their personal study method, suitable or to adjust to the demands of the select university course;
- c) develop in the students the awareness that the career guidance is a formative-decisional process that involves all the dimensions of person (cognitive, metacognitive, affective).

At the end of the two years of didactic work the evaluation of the whole run has been made through three focus groups with the students, the teachers and the researchers and also with interviews to the teachers.

The educational project has been planned with the intent to provoke some professional improvements in the teachers and to contribute to the maturation of the university and professional choice of students.

With the double finality of the experimental project we have formulated two groups of hypothesis: a group for teachers and a group for the students.

In relation to the teachers we hypothesized that at the end of the intervention they have been able of:

- carefully describe the production methods of the exercises of ADVP using the knowledges of the ministerial programs;
- point out the necessary conditions for the carrying out, in similar scholastic contexts, the ADVP exercises;
- evaluate the effects produced by the ADVP exercises observing the formative projects of the pupils;
- use some information on the professional concern, on the decisional styles and on the metacognitive abilities to assist the students and to suggest them in their formative choices post-diploma.

For what concern the students we have formulated seven particular hypotheses. At the end of the intervention they have been able to:

- learn to rationally develop their decisional dynamics;
- make the university choice having clear the correspondence among the final scholastic competences and those initially required by the course of preferred degree;
- recognize their strength and weak points, in relationship with the course of degree chosen;

- complete the university choice having clear which are the essential knowledges to face the study of the first year disciplines of the university course chosen;
- face the university study being sufficiently aware of their own metacognitive competences;
- overcome the possible selection tests for the admission to the university courses chosen;
- overcome the initial difficulties in the university acclimatization.

During the first year, the research group has defined the problem, has formed the teachers, has noticed the initial situation of the pupils, has formulated the general objectives, has prepared the first version of the exercises ADVP and it has prepared the evaluation tools.

The collected information on the students are been analyzed and grouped in profiles. On these first data, that have clarified the demands and the needs of the pupils, we have formulated the specific objectives for the ADVP exercises; we have been realized in the classes during the second year of research.

The teachers of “Altavilla” school have begun to prepare the ADVP exercises that they have made to their pupils the following year. The phase of exercise administration has taken place between November 2011 and May 2012. The proposal of the ADVP exercises in class has been preceded by a consultation and evaluation phase between the teachers and the university researchers.

An essential element was the involvement since the beginning of the class board; this has allowed the two teachers involved in the research actions to work in accord with the other colleagues, that have brought their contribution to the result of the project.

Thus It has been possible to share, choose and realize the experimental activities in the daily didactics and avoid that these resulted detached from the class-context.

4 ADVP EXERCISES REALIZED IN THE SCHOOL ALTAVILLA”

ADVP Exercises realized from the “Altavilla” teachers [19], have allowed the students to promote the personal and professional development thanks to the activation of the mental abilities as creative, categorical, valuation and implicative thought, respectively for the realization of the exploration, crystallization, specification and realization tasks.

The disciplines that have been involved are Latin, mathematics, physics and history of the art. In the beginning of every exercise, a guide describes what students and teacher must do to introduce the exercise and to assist the students during their job; it introduces the general objectives and the verifiable objectives the involved disciplines.

Every exercise is completed by the required and necessary material and execution times. During the year 2012 the following exercises have been created for the fifth classes:

Exercise name	Disciplines	Developmental task	Mental abilities
Riappropriarsi del tempo per riappropriarsi di sé	Latin	exploration crystallization	creative categorical
Dal tempo occupato al tempo che occupiamo	Latin	specification implementation	evaluation implicative
Alla ricerca del numero d'oro	Mathematics, Physics, History of the art	exploration	creative
Acceleriamo o no	Physics, Geometrics	crystallization	categorical
La pista del mio studio <i>Riflettiamo sulla pista</i>	Physics, Geometrics	specification	evaluation
Il percorso del ciclista e il mio	Physics, Geometrics	implementation	implicative

To carry out all the ADVP exercises around 30 hours of job have been necessary.

The exercises have considered writings and group discussions to verify the acquired knowledges and to request the students' intelligence.

For the evaluation of the objectives we have analyzed every student's performance, their planning and their solutions to the proposed problems.

5 THE TEACHERS' FINAL EVALUATION

The evaluation tools used during the run of research have allowed to observe, describe and appraise the results of the experience on the involved subjects (teacher, researcher, pupils) and to verify its possible transferability in other contexts. For this reason we tried to integrate the results of the qualitative and quantitative evaluations.

The evaluation of the results is divided in two parts: the teachers' evaluation through the interviews, the evaluation of the objectives, the students' interest observation, and the pupils' evaluation through the final focus group.

Interviews to the teachers have evidenced that ADVP activities promoted a reflection on one own's competences and on those to develop and to acquire the necessary tools to use the methodology ADVP.

Teachers think that, through the realization of the activities in the class and the use of evaluation tools, they attended great attention to the difficulties that the students meet in the understanding of the deliveries, observing that for the most part the obstacles are tied up to the formulation of the text of the exercises.

They have realized to develop the activities in different ways beforehand, thanks to the received formation and the new used methodology, setting great attention to a didactics time to valorise the human quality of the students.

The activities and the process of research have allowed the teachers to reflect on their job method and on their approach with the students; the teachers have expressly declared that the scholastic success of the students is tightly tied to the teacher's didactic method and his personal motivation.

For what concerns their competence in the research, the teachers are aware of the fact that the formation received helped them to understand, since the beginning, the finalities and the formalities of the project and the ADVP methodology.

Thanks to the observation form, realized for appraising the pupils interest and positive approach, and compiled at the end of every exercise, teachers observed that the interest and the involvement of the pupils is progressively grown.

For what concerns objectives evaluation database form, teachers observed that the pupils have improved their awareness of limits and the dignity and of the value of the human job, the understanding of the multiplicity of the points of view, the organization of their time and the construction of plans for their scholastic job.

The university researcher has realized the focus group with the students at the end of the 30 hours of the ADVP activities.

The analysis of the expressions that emerged in the focus groups with students has outlined some the characteristics and significant points of the various activities carried out by them.

The focus group showed that students enjoyed the activity constructed following the ADVP methodology. They declared that exercises that involved humanistic disciplines helped them "to mature in them a new conception of the man" and they have also given the possibility "to understand to be good to write wise and to make deep reflections".

About the exercises of the scientific area students affirmed "we allowed to practice the critical thought and to understand that also with the physics and the mathematics we could do it". Some of them underlined that they have had the occasion to strengthen the awareness of their own propensity for the scientific subjects and, therefore, the idea to choose scientific university course.

The pupils, during the focus group, made some critical notations that have highlighted the necessity of some changes has underlined around the proposed run. Some students have suggested realizing a

project that allows developing the exercises ADVP during the 5 years of high school. Others have proposed instead to realize the exercises beginning from the fourth year, and, in every case "to conclude them at the end of the first part of the fifth year, to allow us to serenely prepare us to the examination of maturity".

For what concern the students self-evaluation of the achievement of the objectives, they affirmed that have matured the competences related to the knowledge of itself and to the development of research, analysis and assessment skills. All the students are certain that the activities that have brought before, has allowed them to become more aware of their own skills and limits, to improve their own scholastic job method, to analyze the alternatives of their choice and to reflect with critical approach.

The ability to analyse what might facilitate or hamper career goals developed between these years. Subjects used in the experimentation became aware sooner of the role played by school in achieving goals. Feelings of self- esteem increased, but this did not make pupils more ambitious.

Knowledge of jobs grew and pupils discriminated more when looking at the different professions. It does that the program made pupils more active, in terms of extra-curricular activities, work experience, participation in class or in determining career goals. The program appears to lead them more frequently to internal attributions, whether in explaining success in class or career choices.

6 CONCLUSION

Career intervention tries to meet the very real needs involved in preparing a vocation. It is also of considerable current interest. It is possible to predict, without fear of error that it will continue to develop and that its formula is also likely to change.

The success of career education programs constitute a major social challenge. Given their relatively high cost, it is a pity that there should be so few reliable studies devoted to the outcome assessment with the aim of improving the methods that are implemented. Although they are moderate and not invariable, we have observed here that the effects of career intervention could have a positive effect on several aspects of behaviour in young people.

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