

Comparative Evaluation of Several Educational Methods Used in France for the Orientation of Adolescents: Tools, Results, and Methodological Problems

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Progress in orientation educational practices in French-speaking countries has led to the emergence of several methods designed to help in the development of personal and career aims. The several evaluations which have been carried out show that changes seen are first cognitive and specifically involve professional representations: experimental subjects used more descriptors and different descriptors to represent an occupation which interests them. These changes are also cognitive with participants stating that they have been involved in experiences and in activities, have sought information, etc. These initial results once again raise the question of instruments needing to be developed for such evaluation, that of the pertinent variables to be included and finally, more generally, that of a more clear-cut definition of desired aims.

A change in concepts of scholastic and career orientation occurred in the majority of developed countries around the middle of this century. During the first half of the century, methods in this field were essentially focused on the transition between school and working life and involved participation of an expert advisor referring to psychology of aptitudes. Orientation now no longer appears to be limited to this sole transition. It is frequently viewed as an educational action preparing the adolescent for the various «choices» which he/she will have to make. It is also directed at adults. This change was summarized by Gysbers (1984) as follows:

«As new concepts about career and career development began to appear, it became obvious that people of all ages and circumstances had career development needs and concerns, and that they and society could and would benefit from comprehensive career development programs and services. Two such concepts, in particular, had an impact. First was the shift from a point-in-time focus to a life span career development. And, second, was the personalization of the concept of career (the human career) relating it to life roles, settings, and events (...). What is new now is the sense of urgency about the importance of helping people toward the goal of becoming competent, achieving individuals and of helping people focus on their competencies (skills) (...).»

This change in perspective has given birth to several programs designed to achieve such aims. In France in particular, orientation counselors working with young people at school, often refer to three types of method: L'activation du Développement Vocationnel et Personnel (Activation of Vocational and Personal Development), Psychopédagogie du Projet Personnel et Professionnel (Psycho-education of Personal and Career Projects), and Découverte des Activités Professionnelles et Projets Personnels (Discovery of Career Activities and Personal Projects).

The A.D.V.P. falls, through the work of Super, within the broad lines of Rogerian humanist psychology. It is also partially based on the system of Guilford mental operations. Its aim is particularly ambitious. Pelletier and Dumora defined it as follows in 1984:

«Faced with the discontinuous structure of an unstable and fluctuating socio-economic environment (...) our aim is to enable the adolescent to acquire a competence which will permit him/her to now and later analyze each crossroads in his/her orientation, factors in self-appreciation, competencies and limitations in the structure of the surrounding world with its straight avenues and its detours, its opportunities and its constraints»

(Pelletier & Dumora, 1984, p. 28). This could hardly be clearer. The aim is not so much to lead the adolescent to produce positive information concerning him/herself or to provide knowledge about occupations, but rather to stimulate the development of cognitive competencies which are presumed to be required when during adult life he/she will have to take decisions concerning personal and occupational career. Concretely, the educational activities used are aimed at training the individual to «explore» the entire range of possibilities in a systematic manner, to «crystallize» his/her choice and to «specify» it before defining the major stages which will lead to its «realization».

Although they often refer to Wallon, the authors of the P.P.P.P. are first and foremost orientation practitioners who have developed a group of tools and instruments about which it can legitimately be said that they show signs of definite eclecticism and that their link with the works of the author of «De l'Acte à la Pensée» is quite clear. The aim of the P.P.P.P. is hardly less ambitious than that of the A.D.V.P.:

«The endpoint of our activity involves assisting the young person to develop personal projects (...). We do not limit ourselves to the usual concept of occupational projects. (...) In fact the essential point is that expression of professional projects can be relocated in a broader context: that of life projects. To become involved in a particular occupation facilitate or compromise certain social, leisure, family activities etc. (...). Insofar as it is rare for an occupation to fulfill all of the desires of the individual, the development of an actual project thus implies that the individual has asked him- or herself questions concerning the means available to find in the extraprofessional environment those answers which are not provided by the envisaged occupation. (...) The aim which we must pursue is to seek optimization of the self through the choice of various activities (naturally including occupational roles)»

(Pémartin & Legrès, 1988, pp. 81-82). The practical consequence of the amplitude of such a project is that the P.P.P.P. (in fact like the A.D.V.P.) proposes a high number of exercises which are aimed at leading the individual to become aware of occupations and of the organization of work on the one hand, and at the same time of his/her values, interests, self-image and that which others have of him/her.

D.A.P.P. methods refer to concepts of social representation (Moscovici) and of categorization (Tajfel), notably via the application that Huteau used in the area of development of occupational preferences (Huteau, 1982). They also take into account the theories of Bourdieu around the concept of social habitus. The aims of D.A.P.P. methods are more modest than those of the above programs. The first aim is to lead the adolescent to discover that the representations which each individual develops spontaneously concerning occupations are particularly stereotyped and sometimes very inaccurate. The second aim (with emphasis being placed on the link between

personal skills and occupational activities: «tasks»), is to lead the adolescent to become aware of the various ways in which qualifications can be acquired (training at school, but also leisure activities, courses, various events, etc.). The third aim is to lead the participant to identify then become involved in activities which could enable him/her to develop the competencies required in order to be able to subsequently carry out the professional tasks in which he/she is spontaneously interested.

D.A.P.P. methods are thus focused less on the definition of a personal or occupational project but rather on the link between personal skills and occupational qualifications. They stress the necessary involvement in learning experience in order to be able, not only to acquire knowledge and know-how but also to test spontaneous future intentions. (For a fuller description of the principles and content of these methods, the reader may refer to: Guichard, 1989).

Up to now, very few studies have attempted to determine whether these methods actually achieved their expressed aims. In particular, there have been few evaluations comparing the respective progress of experimental and control groups. Nevertheless, some attempts have been made. All have to provide an answer to various methodological questions.

It was in no way surprising that the first of these was: «what should be measured with the aim of demonstrating whether the fundamental aims were in fact achieved?» How to confirm, for example, that an individual who has attended an A.D.V.P. course, will in fact use, when making decisions concerning career, the competences of exploration, then those of crystallization and finally of realization and of specification which he/she is assumed to have acquired? It is easy to imagine the difficulty of defining an operational approach to such questions, in particular since they raise other equally delicate problems, this time concerning the device(s) to be used with the aim of achieving such an approach. Insofar as for both A.D.V.P. and P.P.P.P., the aim involves development by the individual of the sort of permanent capacity to approach in a particular way career decisions throughout his/her existence, it is difficult to see how this can be evaluated other than by diachronic studies where the experimental individuals would be regularly compared with controls and over a long period.

As will emerge below, none of the studies carried out up till now has involved such an ambitious program. Although the aims described for various methods differ considerably, the majority of studies have the declared intention of measuring very similar points. Almost all involved the demonstration in particular of changes of a cognitive nature, notably concerned with the representations of adolescents: their images of occupations, of school and of self. In contrast, evaluation of changes in attitudes or behavior appears much more difficult. Any measurement of the persistence or otherwise of the effects produced has merely been neglected.

Comparative efficacy of various techniques in educational orientation

The first research project which will be mentioned here (Massonnat, 1978) does not fall within any of the three patterns just mentioned. It nevertheless would appear appropriate to report it here since it was directed towards the point shared by all of the various methods: the use of work in groups. Its aim was to estimate the effects of four educational techniques on high school pupils:

- 1) oral presentations in class by an orientation counselor followed by discussion;
- 2) group working sessions followed by presentations from pupils;
- 3) individual discussions between high school student and counselor;
- 4) television films followed by discussions.

The research protocol in addition was to attempt to measure the effect of duration of such activities: one term only (beginning of French 3rd grade), two (last of 4th grade and first of 3rd) or four (entire year of 4th grade and first term of 3rd grade).¹

Experimental populations and designs

The experiment was carried out as follows:

Technique 1 (presentations by counselor):

Group 1 (experimental)	Evaluation 1	Presentations for 1 term	Evaluation 2
Group 2 (control)	Evaluation 1	Nothing	Evaluation 2
Group 3 (experimental)	Evaluation 1	Presentations for 2 terms	Evaluation 2
Group 4 (control)	Evaluation 1	Nothing	Evaluation 2

Technique 2 (working groups): The method was similar to that indicated above, with the addition of a 5th group (experimental, without control group) which were continued for four terms.

Technique 3 (individual discussions): The system was the same as the first, without group 2.

Technique 4 (films): The system was the same as the first, but limited to groups 3 and 4.

The total number of experimental students was 204. There were 70 controls. All were girls. The evaluations involved the use of similar questionnaires.

The first was designed to measure changes in behavior concerned with the seeking of information (Massonnat, 1978, pp. 131-137 and 407-408).

The second (Massonnat, 1978, pp. 399-406) was designed to estimate:

- 1 — Changes in opinions and attitudes concerning:
 - training problems (how would you best like to be able to learn a trade?)
 - occupation and occupational surroundings (what does the choice of or search for an occupation mean to you?).
- 2 — Progress in the development of a career project (how do you see your future?; what do you expect from a career?).
- 3 — Acquisition of knowledge concerning the organization of training and economic context (Massonnat, 1978, pp. 138-141).

A third questionnaire was finally designed to compare descriptions of self as actually perceived, of self as desired and of adults as perceived as well as the description of an envisaged career.

An analysis grid for interviews was also developed. Its aim was to note wishes expressed by the adolescent, the degree of maturity of his/her scholastic or career choice, and the exchange of information processed (Massonnat, 1978, pp. 394-395).

Results. The initial level of knowledge was first assessed. Differences at the outset between natural groups were corrected by the use of covariance. The content of information was equalized: data was provided in writing for all groups. Various hypotheses were tested by Chi², Student's *t* and analysis of variance.

Behavior involved in the search for information and acquisition of knowledge appeared to be the most modified by the educational techniques used.

Thus all experimental pupils increased their behavior in terms of seeking information. This process progressed as the length of the experiment increased. Among the techniques evaluated, group work appeared to be the most stimulating. Individual discussions appeared to have only a limited effect (Massonnat 1978, pp. 196-198).

All experimental students progressed in terms of acquisition of knowledge relative to institutions and the socio-occupational environment. The various methods were not effective to the same extent. Once again group work led to significantly superior acquisitions than those following discussions. Presentations and television films were in an intermediate position. The duration of the technique played a positive role. Finally it would appear that it was the youngest students of a modest background and the oldest of a favorable background who progressed the most (Massonnat, 1978, pp. 229-246).

Findings appeared to be more modest in terms of changes in representations:

«all of the factors making up a representation are not of the same importance in the analysis pattern which it represents. It was felt to be relevant to continue to draw a differentiation between so-called central features and so-called peripheral features. The first involved significances attributed to general and overall aspects in relation to the items studied: for example the idea of representation of work, of social hierarchy in relation to the occupation. These significances have been acquired earlier, often during the primary socialization stage. They are often required to give meaning to events. Their strength often lies in the possibility of their schematic representation, easily resisting subsequent occasional information which may arise. The 'peripheral' nature attributed to the second category of features is related to the fact that they have little link with the former. This is due less to the nature of the feature than to its low degree of mobilization in the cognitive organization which underlies dominant analysis modes» (Massonnat, 1978, pp. 356-357).

«As might have been expected, attempts at restructuration were limited to the establishment of connections between feature, previously considered only separately (p. 355).»

This applied in particular to career projects and study projects which appeared to be much more thought out in relation to each other after the course than before.

Two evaluations of courses based upon activation of vocational and personal development

The A.D.V.P. (Pelletier, Noiseux, & Bujold, 1974; Pelletier & Bujold, 1984) comes from Quebec. In France it is the oldest, best known and probably most widely used method of «psycho-education of future projects». It is based upon group work designed to stimulate:

- Exploration.* The aim of this phase is to gather the most relevant, complete and varied information on the self and future occupations. In this stage, exercises (for example representing oneself through collage in order to discover new facets of one's personality) are used to initiate divergent thinking through creativity.
- Crystallization.* This phase is devoted to activation of categorial thinking. The adolescent is asked, for example, to rank features and classify them according to certain logical principles, find the characteristics several occupations have in common, and identify the requirements that fit several posts.
- Specification.* This stages makes use of evaluative thought. For example, adolescents are put in groups of 2-3 as a function of previously defined and ranked satisfaction criteria and asked to define the occupations which would suit them best.

Realization. Implicative thought is brought into play and students are given exercises involving planning, elaboration, predicting and extrapolation of possible consequences. They are asked, for instance, to imagine everything that will happen to them from the present to the day they enter the job market.

Despite the importance accorded to the method, it would seem that no validation of the A.D.V.P. has yet been undertaken. The two studies described below in fact involved more of an evaluation of various exercises used in the A.D.V.P. rather than an approach to the method as such. The first of these projects involved junior high school students of a modest social background (Guichard, Pierotti, Scheurer, & Viriot, 1988, 1989) and the second with high school students from a middle class suburb of Paris on the one hand and in Switzerland on the other hand (Nuoffer, 1987).

Evaluation of an educational orientation experimental technique from French 6th to 3rd grade

Experimental populations and designs. The experimental group (1) consisted of 17 pupils who in high school participated in 18 sessions based upon A.D.V.P. between 6th and 4th grade, then 11 in 3rd grade. Two groups (2 and 3) of high school students were paired with the 17 experimental students (group 1) on the basis of the following variables: sex, age and occupation of the most highly qualified parent. The experimental design can be summarized as follows:

	6th-3rd grade	Start 3rd grade	Year of 3rd grade	End of 3rd grade
Group1 (experimental)	18 sessions A.D.V.P.	Evaluation 1	11 sessions A.D.V.P.	Evaluation 2
Group 2	Nothing	Evaluation 1	11 sessions A.D.V.P.	Evaluation 2
Group 3	Nothing	Evaluation 1	Information sessions	Evaluation 2

Both evaluations involved identical questionnaires (see Guichard, Pierotti, Scheurer, & Viriot, 1988) including a large number of open questions. The main dimensions evaluated were defined with reference to the aims of the exercises offered. They may be classified into five principal categories:

1. Progress in mastery of factors concerned with self-knowledge and its extensive possibilities in the development of a project. These were evaluated using questions such as: «if you had to describe yourself to somebody else in order for that person to know you as well as possible and to help you to choose your future orientation, what would you say? (think about what you know, what you know how to do, what you like, what you want, etc.)».
2. Enrichment of representations of occupations (high school students were asked to describe an occupation which interested them, to draw up a list of questions which they would ask a professional in order to learn about his occupation, etc.).
3. Changes in knowledge of possible training programs.

4. Involvement of high school students in more active behavior (what activities in or out of high school does the pupil participate in or envisage participation in?).
5. Changes in factors to which success is attributed (does the high school student attribute his success in a school subject which he had to choose to himself or to outside factors and causes?).

These questions were accompanied by information concerning sex, age, social origin and academic results of the students.

Results. Answers of junior high school students were analyzed in terms of content, this enabling the definition of 60 modalities. These were then dealt with by two correspondence analyses. For example, the question: «*what questions would you ask a professional in order to learn about his/her occupation?*» enabled the definition of six modalities: the pupil did or did not mention questions (1) concerning working conditions, (2) training, (3) and the tasks performed by the professional.

The first analysis compared groups at the start of 3rd grade and the second at the end of this same year, during the 11th session.

Evaluations at the start of the 3rd grade did not reveal a massive effect of the 18 sessions of educational orientation. However neither can it be said that they appeared totally ineffective.

The basic distinction best reflecting the answers provided by high school students was a contrast between good and bad students. Those with the best academic results gave the richest description of occupations, in particular took an interest in studies leading to such occupations, were aware of the «personal qualities» which they used to described themselves and form the basis of success in life, and were well informed concerning subsequent studies. Finally they stated that they were influenced by what others thought of them. The weakest pupils had all of the opposite characteristics, including that of expressing the paradoxical answer: even if I could go on to 2nd grade, I would choose an occupational diploma course.

Experimental students differed (by factors 3 and 4) from control students only in a secondary manner. The former saw school as a factor which could be helpful in life. They more often expressed precise and ambitious occupational plans (involving long studies). They took an interest in the tasks involved in an occupation and described themselves making reference to their knowledge and know-how. However the educational technique involved did not appear to have effects in terms of involvement in extra-scholastic activities. Pupils from both control groups appeared very similar and differed radically from the former. They made no mention of school either as a factor in terms of failure or success, said that they did not have any future plans, tended to explain success in life only on the basis of environmental factors, were not interested in the tasks involved in an occupation, and did not describe themselves by reference to their knowledge and know-how. In contrast, they would ask a professional questions concerning work conditions.

Results at the time of the second questionnaire were similar. Main trends remained the same, but differences were radicalized. The school success factor became a fundamental feature in differentiation. It was only regarding the 4th factor that students who had participated in all A.D.V.P. sessions differed from those who had not (those of group 2 being in an intermediate situation).

At the time when students are confronted by the reality of decisions concerning them taken by professors (will they be permitted to continue studies to high school diploma level?) that it is fundamentally school grades combined with age and sex which can best account for the differences seen. Academic evaluation thus appeared to play a basic role in the development of representations and of projects by students.

These final differences between the control group and experimental groups tend to confirm the hypothesis that the action undertaken was nevertheless not without effect. Those participating expressed positive expectations regarding school and had far less vague occupational representations than others. However the impact of this action did not appear to have been sufficient to eliminate the more fundamental contrasts between «good» and «poor» students.

The orientation workshop

The orientation workshop consists of a one-day program aimed at 1st grade high school students. It involves seven exercises centered on the individual, but assuming, as an educational principle, interactions and retroactions on the part of others. Certain tasks are focused on self-awareness (e.g.: interviews between participants, identification of the characteristics of famous people in which each of them is able to recognize him/herself, selection — from a list — of occupational satisfaction criteria). Others are aimed at exploring and comparing occupations (e.g.: identification, using criteria developed earlier, in a list of jobs of those considered to be interesting, drawing up an inventory of questions to be asked in order to improve one's knowledge of these jobs, filling-out of an occupational evaluation grid, etc.).

Nuoffer gives to this workshop three kinds of aims: stimulation of exploratory behavior, the development of certain skills necessary in this phase and favorizing the formation of fuller and more precise representations of self and of occupations in the students involved. Nevertheless, the nature of the exercises used suggests that it is the last which is fundamental.

Experimental populations and designs. Seven groups of subjects were set up for evaluation: four in Fribourg (Switzerland) (indicated by the letter «F») and three in Rueil-Malmaison (France) («R»). The experimental design was as follows:

		During a single day:	5 months after:	
RE ₁ Information	Evaluation 1	Workshop Evaluation 2	Evaluation 3	
FE ₁ Information	Evaluation 1	Workshop Evaluation 2	Evaluation 3	
FE ₂ Information	Evaluation 1	Evaluation 2*	Evaluation 3	
5 months later:				
RC ₁ Information	Evaluation 1	Evaluation 3 Workshop	Evaluation 2	
FC ₁ Information	Evaluation 1	Evaluation 3 Workshop	Evaluation 2	
FC ₂ Information	Evaluation 1			
RC ₂ Information	Evaluation 1			

Note. E = experimental, C = control; * In place of the workshop group FE₂ received a shorter sensitization program. Groups FC₂ and RC₂ consisted of students refusing to participate in the workshop.

Control groups 1 (RC₁ and FC₁) consisted of pupils volunteering to participate in the workshop, who nevertheless actually did so only five months later, after having answered the questionnaires forming the basis for Evaluation 3. After the workshop, they were given those forming the basis for Evaluation 2.

Groups did not have similar numbers (RE₁ = 60, but 26 only for evaluation 3; FE₁ = 48, FE₂ = 99, RC₁ = 52, FC₁ = 49, FC₂ = 50, RC₂ = 192). They were not paired, and the existence may be seen, notably in the population of French students, of fairly wide differences between those of the experimental group and those of the control group. In the former, 42% of high school pupils came from the most scholastically prestigious streams (those leading to the most difficult high school diplomas: types C, D, and E), as compared with 32% involved in markedly less prestigious streams (those leading to technical high school diplomas: types F and G).

The various assessments involved questionnaires. The following were used for evaluation 1:

1. The Crites vocational aptitude scale (with the subject being required to answer «true», «fairly true», «fairly false», «false», to items such as: «*I don't know much about what occupations require*»; this evaluation instrument is described in detail in: Huteau & Ronzeau, 1974).
2. Answers to questions, the majority of them open:
 - enumeration, in three minutes, of possible occupations after high school diploma
 - a description of self
 - a description of occupations including enumeration of undesirable features
 - a list of experiences and of activities undertaken to learn about self and about occupations
 - expression of attitudes concerning the job market and risks
 - assessments concerning the estimated degree of appropriateness of projects.

Similar instruments were used for post-tests. The following were added:

- subjective estimations of participants concerning information collected
- subjective evaluations concerning their attitude to choice criteria (interests, job market, area where they lived, etc.)
- a list of personal activities (discussions with fellow students, lectures, visits, schemes with industry, etc.).

Results. These may be grouped into three broad types of conclusions and of explanatory hypotheses.

1. Students who volunteer or not to participate in an orientation group differ from each other. It is those who have thought most about their future orientation who are ready to invest the most in further extending possibilities. More specific comparison shows that pupils not joining such a program succeeded less well in the D 70 test than their fellow students. This rating scale is known to be considered as an instrument for measurement of general intelligence. It consists of a series of figures which must be completed by first inferring to the laws governing them. Results of this test and scholastic success are correlated. As a result, the hypothesis can be advanced that it was the weakest students who not only expressed the least elaborate projects but also the least likely to take an interest in them. This finding offers an explanation of non-pairing of the groups. As already mentioned, at Rueil Malmaison in particular, it was more often pupils from the most prestigious streams who volunteered to participate in the experiment. A psychometrician or a secondary school teacher would no doubt add that these were also the intellectually brightest pupils. Inevitably this raises a doubt as to the validity of comparisons of possible changes seen in the experimental and control groups. While progress of pupils in the experimental group was better than that of the control group, should this be explained by (1) their participation in the workshop, by (2) stimulation by the first questionnaire of a fuller and deeper process of reflection, by (3) a sort of «naturally livelier progress of more intelligent pupils», or by (4) interaction of two or three of these variables? There is nothing in the study design which would justify support being given to one or other of these hypotheses. As a result, the two following conclusions must be viewed in relative terms:
 2. Short-term comparisons of the answers of experimental subjects between them, before and after the workshop (evaluation 1 with evaluation 2) showed that they enriched their representations of occupations: they used more descriptors in the post-test than in the pre-test. Paradoxically, they were less eloquent on the subject of themselves after the workshop than before (analysis being based upon the studies of L'Ecuyer, 1978). It seemed just as if this one-day program affecting identity led students to

be much more circumspect in their description of themselves. The possibility therefore cannot be eliminated that the workshop may have introduced a doubt into the mind of the student concerning the image which he had of himself.

3. Mid-term results (comparison of changes after five months before experimental and control groups) were along the same lines. When describing occupations, experimental subjects used more descriptors, referring back to a larger number of categories. They had also become involved in a larger number of experiences. In contrast there was no significant difference regarding description of self.

Evaluations of courses of psycho-education of personal projects in high school

It was at the end of the 1970s that Legrès and Pémartin (1980, 1982a, 1982b, 1983, 1985; Pémartin & Legrès, 1988) began the development in France of techniques of class methods in the psychoeducation of personal projects. Many of the exercises which they evaluated experimentally differ only slightly from those used in the A.D.V.P. These involve group work concerning the knowledge of occupations (e.g.: find all of the questions which one could ask about an occupation), representations of self (e.g.: an adolescent filled out a questionnaire concerning his/her relations with others, school attitudes, etc. These answers are compared with those which a colleague has produced in describing the first individual), and values specific to the individual (prestige, liberty-independence at work, etc.). Many of these exercises involve the use of material presented in the form of tests of interest, personality, self-image or questionnaires regarding occupational values. However there is an essential difference here from the psychometric approach. Development of the individual is involved rather than drawing up an assessment. As a result, each finding is systematically compared with others. It is also brought into question during group discussions.

Legrès and Pémartin have published only two evaluations of their activities. The first during the two first years in junior high school (6th and 5th grades). The second during the two following years (4th and 3rd grades). Unfortunately, their experimental designs do not assess the initial level of the students. This implies that any final differences may merely be reflections of differences present initially.

Evaluation of method after two years at high school

Experimental populations and designs. The system was as follows:

	In 6th and 5th grades:	End 5th grade:
Experimental group	12 P.P.P.P. sessions	Evaluation 1
Control group	Nothing	Evaluation 1

Each of the two groups consisted of 49 students. Each student of the experimental group was paired with a similar student in terms of sex, age, socio-occupational class of the father and the establishment attended.

Evaluation was based upon answers to three open questions:

- «Tell us all that you know about the occupation (or one of the occupations) that you would like to have later.»

- «Give us all the reasons for your choice of occupation. Why do you think that this is a 'good' choice?»
- «Who are you? Try to give us the most accurate possible description of yourself.»

Results. Experimental students took into account more dimensions linked to the occupation (E.G. $M = 3.7$, C.G. $M = 2.9$, $t = 5.4$, $p < .01$). However this appeared to be less true for those of a working-class background. Differences between answers of experimental and control students did not concern the description of occupational activities, mention of demands of the job, nor that of the material or physical conditions associated with the job, but rather references made by the former to the social conditions surrounding the occupation. They also appeared to have a more accurate vision of the studies necessary in order to be achieve their aim.

Students of the experimental group gave more reasons in explaining their choice of occupation. They used more features when describing themselves and often made reference to features of the «adaptive self» («*I try to control myself*») or the «social self» («*I want to join a sports club*»).

Evaluation of the method at the end of 3rd grade

Experimental populations and designs. The system was identical to that used before. There were 69 students in each group. Evaluation was based upon the answers to six open questions:

- «Occupation(s) or types of activity that you think about.»
- «Describe yourself as completely as possible.»
- «Describe your life in ten years time as you see it.»
- «Mention all of the favorable factors which should help in your project (...).»
- «Mention all of the reasons which have led you to think about one of these occupations or these types of activity.»

Results. Insofar as questions did not involve occupational representations, the only evaluable results concern the representation of self. Students of the experimental group ($M = 4.80$) tended to use slightly more categories in describing themselves ($M = 4.80$), control group = 4.31, $t = 2.57$, $p < .05$). This result can be explained specifically by the answers of girls, with no difference being seen between experimental and control boys.

Experimental students mentioned more favorable factors (academic success, personality traits, motivation, interests) or unfavorable factors concerning the realization of their projects. They showed themselves to be particularly sensitive to obstacles linked to their personal characteristics.

Finally if no difference was seen concerning the representation of self «in 10 years», experimental students explained the reasons behind their choices more fully.

Evaluation of D.A.P.P. and D.A.P.P.I. methods

The D.A.P.P. (Découverte des Activités Professionnelles et Projets Personnels — Discovery of Occupational Activities and Personal Projects) and D.A.P.P.I. (... et Insertion — and Assimilation) methods are relatively recent (Guichard, 1987, 1988, 1988a, 1988b, 1989, 1991). These involve courses of three or four half days. D.A.P.P. is designed for high school pupils and for students, and D.A.P.P.I. for low achiever 3rd graders as well as those in technical high schools.

These methods involve sessions of 3 or 4 half-days (i.e. a total duration of between 10 and 15 hours). Educational progression in particular includes three exercises involving group work and which take place in the following order:

1. Reconstruction of occupations via the activities each involves. This exercise consists of classifying cards, each of which states a particular task (e.g. «I interview people individually to recruit new staff»). The aim of the exercise is to discover that jobs often differ from the image students have of them (in particular, that there is often more variety in a job, and that different occupations may at times involve identical activities).
2. Reconstruction of occupational histories. This time the cards are used to discover and organize the main features in the lives of a number of skilled workers. The aims are to help the trainees readjust overly scholastic images of career development and become aware of the importance of knowledge and know-how acquired at school and out of school.

Cards used in both of these games have been produced on the basis of interviews with professional who accurately described all of their occupational activities, as well as the events seen by them as their learning experiences.

3. Transfer of the conclusions of the exercises in (1) and (2) to each student's personal profile. Each trainee is asked to identify the occupational activities (tasks) which interest him/her the most and to take stock of everything which can help him/her to reach such a goal (grades, outside activities, etc.). She/he has finally to identify those activities which she/he could engage in immediately in order to further increase his/her chances.

Evaluation of D.A.P.P.I. in technical high school 3rd grade

Experimental populations and designs. Two independent groups of 18 students from two tertiary technical school 3rd grade classes, both considered to be poor achievers and from the same school, were set up. The experimental design was as follows:

		1 week later	4 weeks after course
Group 1 (experimental)	Evaluation 1	D.A.P.P.I. course	Evaluation 2
Group 2 (control)	Evaluation 1	Nothing	Evaluation 2

Both evaluations involved use of the same questionnaire, similar along its broad lines to that used in 3rd grade for evaluation of A.D.V.P. (see above).

Results. Two analyses of correspondences were undertaken. The first involved evaluations before. Its aim was to confirm the identity of the two groups concerning the dimensions measured. The second concerned answers of students at the end of the period.

Comparison of experimental and control groups before the course showed that they were not perfectly equivalent. The first included more students who could be described as «at sea» and more of the «relatively advantaged». Characteristic of the «at sea» was the tendency to wander among a multiplicity of scholastic intentions corresponding to any particular occupational project. Their representations of occupations were astonishingly limited. These youngsters often had an unemployed father. In contrast, the «relatively advantaged» frequently had a father

in an intermediate occupation. Their academic results were satisfactory and their representations of occupations rich.

It can be seen that once again the degree of elaboration of occupational representations appears to be an excellent indicator of the degree of disadvantaged. The more schematic and poor they were, the more the student was likely to be disadvantaged.

The control group included more students intermediate between these two extremes. Broadly speaking, it may be said that at the start of the period the experimental group was that of extremes while the second was that of averages.

These differences were not found with the second questionnaire. Four major contrasts then distinguished those answering.

The first (factor 1) involved an external-internal dimension. Certain students appeared to be turned towards the outside. They attributed success to outside causes and carefully described occupations. In contrast they did not take time in giving such a rich description of themselves. Their academic projects were ambitious. Others, on the contrary, gave only a brief description of occupations but took trouble in describing their own personal qualities. The latter tended to attribute potential success to internal causes.

The second contrast distinguished experimental and control students (factors 2 and 4). Those participating in the D.A.P.P.I. course tended to express ambitious study and career projects. They were well informed about long studies and had an accurate perception of their academic results. They stated that their success in life was dependent upon them. They had particularly rich occupational representations. They expressed the desire to subsequently become involved in extra-scholastic activities. Finally they perceived school as facilitating the success for achievement of their projects. Control students generally showed all of the reverse characteristics: attribution of success to external factors, hesitant projects concerning studies which in most instances were for short periods only, overestimation of academic results, poor knowledge of possible training programs, extremely limited occupational representations. The only positive point was that they participated in many extra-scholastic activities and furthermore envisaged started others.

The third contrast (factor 3) distinguished better students from those who were only average. However this distinction was not linked here to the richness of occupational representations. It involved a more general attitude. In the eyes of the best achievers, school was a factor in success and this success was dependent upon themselves. Others were silent about school but stated that they also wished to go as far as possible in their studies.

The final contrast was linked to age. Those students most behind in their studies tended to participate in extra-scholastic activities while younger individuals gave priority to purely scholastic pursuits.

Comparison of these findings with initial data thus appears to be very positive. Approximately one month after the course the richness of occupational representations and the precision of projects no longer appear to be directly linked to academic success, but rather to whether or not the individual had participated in the course. It may nevertheless be noted that as for the two evaluations of A.D.V.P. methods, this course participation was not reflected by enrichment of representations of self. It is true that this was not one of the intended aims here. It should nevertheless be emphasized that in the population considered (with a strong female predominance, this involving tertiary occupational education) the richness of description of self appeared to be linked to an internal factor. Might this be the manifestation of an attitude directing an implicit lifestyle project: family life in contrast to occupational life?

Evaluation of D.A.P.P. in 1st grade

Experimental populations and designs. Two independent groups of 206 students from 1st grade classes in various high schools were set up (each of the two groups including the same number of students from the different types of 1st grade).

The experimental design was identical to that described above. Changes in career representations were evaluated on the basis of four open questions concerning:

- description of tasks involved in an attractive occupation
- thoughts about what was attractive about such an occupation
- indication of what is important when choosing an occupation
- factors taken into account at a job interview.

Results. Students of the experimental group progressed in description of an occupation which was of interest to them. Firstly they mention more descriptors (before the course they used 2.93 descriptors by occupation on average and after 3.71. In the control group progression was virtually nil: from 2.97 to 3.05). In addition they did not describe occupations in the same way after as before. They paid more attention then to descriptions in terms of precise tasks or required qualities rather than limiting themselves to general remarks.

In contrast, changes were minimal in terms of descriptions of what attracted students to any particular occupation. Before as after, in the view of these adolescents the interest of a job lay first in the contacts which it offered: the meetings with other which it enabled. Nevertheless students of the experimental group mentioned more frequently in answer to the second questionnaire that they expected to be able to take on responsibility and to be able to be enterprising.

Between the first and second questionnaire, the majority of students appeared to have asked themselves questions as factors to be taken into account when defining a career choice. They were more eloquent. This was probably due to the effect of the first questioning on the second. However, this increase was much more clearly evident in the experimental group. 48.5% of experimental high school students answered the first questionnaire by indicating at least three items, and 47.1% of the control students. These figures for the second questionnaire were 63.6% and 56.1% respectively. Furthermore, while control students increased their answers in a relatively undifferentiated manner, those of the experimental group started to make more specific reference to training, to studies, to the knowledge and know-how and skills necessary in order to be able to do a job. In the second questionnaire, 51% of students in the experimental group referred the choice of an occupation to the necessary knowledge and skills, with 38% in the control group. These figures concerning answers to the first questionnaire were 36% and 33% respectively.

Findings were similar concerning job interviews. In both groups answers were richer the second time, with a notable increase in answers such as «the interview will be concerned with my qualifications and my competencies» and «my personality». However progression was markedly greater for those who participated in the D.A.P.P. course. At the time of the first questionnaire, 28.6% of experimental students answered by indicating at least three items, and 30.4% of control students. These figures were 35.8% and 32.3% respectively for the second questionnaire. In addition, the experimental group began to attribute a preponderant role to knowledge of an occupation and evaluation of its appropriateness for the individual. According to them, job interviews far outweigh the knowledge that a candidate might have as to the tasks corresponding to the particular job as well what the candidate expects of the job. At the time of the second questionnaire, and in the experimental group, there were 117 mentions of items relating to this category as compared with 78 for the first questionnaire. These figures were 78 and 79 respectively for the control group.

It may thus be stated that the D.A.P.P. course fully achieved its aim of centering the attention of high school students on future employment, on the way in which it will be exercised and the various competencies necessary for any particular career.

Conclusions

These various results lead to the raising of three broad types of question.

The first concern the methods evaluated. These differ in terms of several characteristics, and, notably, the «conceptual» or «ideological» frameworks within which they are located, the essential finalities which they define, the intermediate aims which they attempt to articulate to varying degrees of explicitness, the exercises which they involve, the duration of activities, their timing, and the existence of various degrees of formalization of the theoretical link between the tasks proposed and intended aims, etc.

Evaluation of methods with the most general aims would appear to have essentially consisted up to now of a very global approach to the effect of the interweaving of variables where it is difficult to say which or the interaction of which best «explains» any possible variation seen. To remedy such a deficiency or problem would imply that prior conditions of at least three types need to be fulfilled. Firstly the articulation between general and intermediate aims must be accurately defined. The second point is that of required reflection as to the link between the latter and proposed exercises. The final requirement would be definition of the pattern of the educational process (duration of exercises, succession and timing), linking it not only with stated aims but, above all, with the initial state of the representations and knowledge of the populations concerned.

The striking point, when reading the theoreticians or practitioners of both A.D.V.P. and P.P.P.P., is the absence of concrete references regarding what already exists, i.e. not only future intentions developed spontaneously by the young people concerned and occupational stereotypes, but also a school system which functions in accordance with certain rules and regulations and standards, and which participates in the development of certain images of the self and certain ways in which individuals ask themselves questions about their career orientation. The impression is one of educational processes which would define a very global aim without raising any questions as to the point of departure, for this particular adolescent, a social actor spontaneously representing to a certain degree the constraints, choices and decisions specific to the individual. The feeling which emerges from these programs is that of collections of exercises of a very broad range of intentions, with it being imagined, though without definite confirmation, that certain should indeed come together in achieving the very broad stated aim.

Under such circumstances, it is hardly surprising that it is those programs taking place over a long period, those which in a way become diluted in school time, which seem to be the least effective. On the contrary, it is workshops involving a defined time period which appear to best produce the expected effects and this even when evaluation takes place several weeks or months later.

However, there is nothing to show that it is the time pattern which actually plays a role here. Short activities (orientation workshop or D.A.P.P.) define much more precise aims, which are also much easier to link to exercises articulating with them and to evaluate. These concentrated sessions have the additional advantage of representing an interruption of school time («a brief period where we shall stop in order to think about what school means to us, about the things which are important in our existence»). As a result, there is far less risk that such activities will be seen by students as having the status of a weekly two-hour period when, as during music or drawing classes, one can actually spend the time preparing for «what really matters» (e.g. mathematics homework).

Generally speaking, when changes are seen, they are first cognitive and specifically involve professional representations. Experimental subjects use more descriptors and different descriptors when describing a career which interests them. These changes are also conative: students state that they have been involved in experiences and activities that have sought out information, etc.

These courses do not appear to have any notable effects on self image. No result was seen in the majority of cases. When any such effect occurred (P.P.P.P.), it was particularly slight and in view of the lack of strictness of the experimental methodology (no assessment of equivalence of groups before the experiment, pairing of pupils neglecting the fundamental concept of academic success), it cannot be accepted as valid. Such a finding is hardly surprising. Self image is linked to the entire experience of the individual. Academic success played a fundamental role within it (Gilly, Lacour, & Meyer, 1972; Bariaud & Olivéri, 1989; Meyer,

1989). It is difficult to see how a few exercises at school would produce such changes. In the best of situations the course might stimulate the individual to undertake activities which in their turn will lead him to modify this image. The role played by experience is of fundamental importance here.

The second area of reflection concerns evaluation methods. As in any attempted evaluation, the questions which arise here relate first to the choice of population, second to the parameters measured, third to the techniques used to collect data, fourth to the timing of assessments, and finally the analysis of the information obtained.

None of the tools described here is strictly experimental. However certain partially overcome this handicap by careful confirmation of the comparability of groups before the experiment. One of the important conclusions to emerge from evaluation of the orientation workshop is that participation on a voluntary basis opens up a very notable risk of bias, a bias which obviously must be evaluated (for example using natural groups or including only adolescents who volunteer to participate in the educational activity, with those attributed to the control group actually participating in activities only after the second assessment).

The various approaches described here are based only on questionnaires filled out by the youngsters involved. This singularly limits the aims of the assessment. These most often involve knowledge, opinions and representations which are approached only in relation to their content. How then can changes in attitude, in behavior, in the structures of representations and actual involvement in activities be evaluated? Group trainers report that certain methods lead to a change in the relationship which students have with their academic activities. They appear to become more active in class, adopt a different attitude with teachers and the administration, take more care of their appearance etc. How can such changes be measured? In the abstract one could imagine asking teachers or trainers to routinely note certain types of behavior or activities of adolescents (seeking information, of a vacation job, participation in a club, taking on responsibilities, joining of a training program, etc.). A protocol of this type is undeniably easier to conceive than to actually use in practice.

It would also seem that in individual interviews following certain courses students might generally envisage the question of their orientation in a different way. They appear to ask questions as to their general attitude concerning existence rather than to focus strictly on their academic results, the latter not being neglected but reintegrated in a more general view of the problem. A qualitative approach, based upon research interviews, would probably be superior to questionnaires in analyzing such changes.

At best, the post-test occurred five months later. Such a period is particularly short with regard to the desired aims. Insofar as the aim of these techniques is to help the course participant to prepare for a transition (junior high school-senior high school, high school-higher education, school-active life), it would be of interest to note with hindsight what actually occurred in those who participated in the course and those who were not involved in such activities. In view of sampling difficulties it is difficult to imagine here any method other than qualitative: semi-led interviews or open questions.

The final area for reflection is that of the aim of evaluation. All data collected indicate the need to take into account the variables of academic results, sex and social origin. Variables of a psychological nature should be routinely introduced in such protocols. Mention could be made, by way of an example, of dependence upon or independence of the field explored: could certain methods possibly be more advantageous to independent or in contrast to dependent individuals? In correlation with this, there is the possibility that certain courses might produce changes in the cognitive style of participants with for example dependent individuals becoming more independent? It would be worthwhile carrying out or developing the same type of study in terms of the time perspective or of the locus of control.

Finally, as has been seen, changes evaluated were related to representations of self and of occupations as well as to the involvement of individuals in activities or behavior involved with the seeking of information. But perhaps it would also, for example, be appropriate to evaluate the degree of elaboration of decisions of the individual? This could orient research

towards the diversity of factors which the individual takes into account when making a choice, the way in which they might be weighted and integrated. For this one could envisage protocols which would include, before and after a transition, control and experimental subjects in terms of their explanation of the way in which they represent to themselves or have represented to themselves this decision as taken. For such an evaluation to be valid, it would be necessary for the proposed method to cover such aims. This brings us back to the more general problem of the strict definition of the operational aims of «project psycho-education» methods. As stressed by Huteau (1988) it is probably because of this aspect that the majority of them are imperfect for the present.

Note

- ¹ In France, the 6th grade is the first class in high school, the 5th is the second, and so on. When high school students enter the 6th grade, they are usually 11 years old.

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Most relevant publications in the field of Educational Psychology:

- Guichard, J. (1989). Career education in France: new objectives and new methods. *British Journal of Guidance and Counselling*, 17, 166-178.
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