



Improving the Problem-Solving and Decision-Making Skills of a High Indecision Group of Young Adolescents: A Test of the “Difficult: No Problem!” Training

LAURA NOTA* AND SALVATORE SORESI

*University of Padova, Department of Developmental Psychology and Socialisation, 35131 Padova, Italy (*Author for correspondence: E-mail: laura.nota@unipd.it)*

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Abstract. A number of theories and models have helped to elucidate the decision-making difficulties encountered by some young adolescents. These theories and models together with the results of research focused on problems associated with career indecision in adolescents provide the basis for the present study aimed at establishing and verifying the efficacy of an intervention program whose purpose is to improve problem-solving and decision-making skills. We hypothesised that a program designed to increase general competencies could greatly impact decisional problems and could reduce levels of indecision among adolescent students. The current study will provide a description of our intervention and an evaluation of its effectiveness.

Résumé. Améliorer les capacités de résolution de problème et de prise de décision d’un groupe de jeunes adolescents très indécis: un test de la formation “Difficile: pas de problème!”. Nombre de théories et de modèles ont permis d’élucider les difficultés dans la prise de décision rencontrées par certains jeunes adolescents. Ces théories et modèles ainsi que les résultats de la recherche consacrée aux problèmes liés à l’indécision du choix vocationnel chez les adolescents fournissent la base de la présente étude visant à établir et vérifier l’efficacité d’un programme d’intervention dont l’objectif est d’améliorer les capacités de résolution de problème et de prise de décision. Nous avons fait l’hypothèse qu’un programme destiné à accroître des compétences générales pourrait avoir un impact important sur les problèmes de décision et pourraient réduire les niveaux d’indécision chez les jeunes étudiants. Cet article présente une description de notre intervention et une évaluation de son efficacité.

Zusammenfassung. Förderung der Fertigkeiten zur Problemlösung und zur Entscheidungsfindung bei einer Gruppe besonders unentschlossener Jugendlicher: Ein Test des Trainingsprogramms “Schwierig: Kein Problem!”. Mehrere Theorien und Modelle haben dazu beigetragen, die Schwierigkeiten in Entscheidungssituationen zu erhellen, denen sich manche Jugendliche gegenübersehen. Diese Theorien und Modelle bilden, zusammen mit Forschungsberichten über Probleme von Jugendlichen im Zusammenhang mit beruflichen Entscheidungen, die Grundlage für diese aktuelle Untersuchung; deren Ziel ist es, die Wirksamkeit eines Interventionskonzepts zu bestätigen und zu verifizieren, dessen Zweck die Förderung der Fertigkeiten zur Problemlösung und zur Entscheidungsfindung ist. Unsere Hypothese war, dass ein Unterrichtskonzept, das auf die Entwicklung und Förderung allgemeiner Kompetenzen ausgerichtet ist, auch sehr großen Einfluss auf Entscheidungsprobleme haben und das Ausmaß von Unentschiedenheit

unter jugendlichen Schülern verringern würde. Die vorliegende Untersuchung enthält eine Beschreibung unseres Unterrichtskonzepts sowie eine Evaluation seiner Wirksamkeit.

Resumen. Mejora de las habilidades de resolución de problemas y toma de decisiones de un grupo de adolescentes con alta indecisión: Evaluación del programa “Difícil: ¿No hay problema!” Son diversas las teorías y modelos que han ayudado dilucidar las dificultades en la toma de decisiones encontradas por algunos jóvenes. Estas teorías y modelos, junto con los resultados de las investigaciones centradas en los problemas de indecisión vocacional de adolescentes, proporcionan la base de este estudio dirigido a establecer y verificar la eficacia de un programa de intervención cuyo propósito es mejorar las habilidades de resolución de problemas y de toma de decisiones. Se planteó la hipótesis de que un programa diseñado para incrementar las competencias generales produciría un gran impacto en los problemas de decisión y podría reducir los niveles de indecisión entre el alumnado adolescente. En este artículo presentamos una descripción de nuestra intervención y una evaluación de su efectividad.

Introduction

Adolescence is a life phase characterised by the exploration of the world of work in order to evaluate potential options in readiness for the transition from school to work (Super, Savickas & Super, 1996). It is also a stage where young adolescents are increasingly faced with making many important life decisions influencing their future. The different options and choices made during this period may strongly affect the direction their lives may take. In addition to deciding about school and career pathways, young adolescents are increasingly faced with decisions regarding drug use, sexuality, and other forms of risky behaviour that may strongly influence their lives. Such decisions are further complicated by the presence of barriers like conflicts with parents and other significant adults, as well as a lack of adequate training on problem-solving and decision-making skills (Mann, Harmoni & Power, 1989; Nota, Mann, Soresi & Friedman, 2002).

Cognitive abilities mature during adolescence and enable many young adolescents to learn how to process discrepant information (Sternberg & Rifkin, 1979) and establish effective decision-making skills. Younger adolescents (between 11 and 14-years-old) compared to older adolescents (aged 15 to 18) have more difficulties in defining and analysing a complex situation from several points of view. They also have more problems finding new solutions, evaluating the reliability of advice and suggestions, and predicting the consequences of their choices (Friedman & Mann, 1993).

Such a situation is a normal stage in the adolescents' development. It is, however, important to keep in mind that some adolescents may have deficits in problem-solving and decision-making competencies (Brown & Mann, 1991), while at the same time are often required to make significant life

choices. Indeed, in many countries adolescents are required to make academic and career choices that are important and sometimes final. Friedman (1991), when studying the types of decisions with which Israeli adolescents are faced, found that a large proportion of them considered choices related to their educational future as problematic (43% of the problems expressed concerned academic-career choice). Soresi (2000) reported similar results in a sample of young Italian adolescents. Gati and Saka (2001) highlight the fact that young adolescents may feel choice-centred conflicts with significant others more acutely than their older counterparts do. This is why younger adolescents experience higher levels of difficulty and indecision.

It is important to remember that indecision is increasingly considered as a multidimensional construct (Betz, 1992; Newman, Gray & Fuqua, 1999; Santos & Coimbra, 2000; Wanberg & Muchinsky, 1992) and that there is a fair amount of consensus in distinguishing between developmental indecision, which corresponds to a normal phase, in developmental terms, and the chronic or generalised indecision, which corresponds to a difficult situation of decision-making in different settings of one's life (Betz, 1992; Lewko, 1994; Santos & Coimbra, 2000). Osipow (1999) distinguishes between career indecision, as a "state which comes and goes over time as a decision is made" (p. 147), a state that is normal in developmental stages, and indecisiveness, as a "personal trait which generalises across situations demanding decisions" (p. 148). Callanan and Greenhouse (1992) described indecisiveness "as reflecting a more permanent inability to form a career decision, perhaps rooted in a personality disorder" (p. 213). A series of research studies has actually highlighted that indecisive individuals also show high levels of ambivalence, anxiety and frustration, low personal identity, poor self-esteem, external locus of control (Fuqua, Blum & Hartman, 1988; Lucas & Epperson, 1990; Jones, 1989; Wanberg & Muchinsky, 1992).

The participants in the present study were young adolescents who, for the first time, had to make a decision about their future and it would be difficult to state that some of them were experiencing a situation of indecisiveness. Osipow (1999) actually says that "the most common way for us to determine whether or not an individual's career uncertainty is indecision or indecisiveness is retrospectively" (p. 148). It is sure that some people can be undecided without being indecisive, as well as some indecisive individuals can manifest undecided behaviour at different times in their lives. In the present contribution indecision will, taking into account this point of view, refer to a condition of simple or developmental indecision that may be experienced more or less intensely by young adolescents. If other factors are added, like low decisional efficacy beliefs and a tendency to resort to maladaptive decisional styles, it can make choosing even more complex to them. Nota and Soresi (1999) found

that 11.5% of this group had high levels of indecision, were unsure about their future, and had lower than average self-knowledge, decisional abilities and self-confidence. Moreover, the tendency toward externality – the future depends mainly on chance or on events beyond one's control – turned out to be particularly high. All this regardless of the fact that the issue of choice was considered rather important.

Among the factors that can favour the perception of a career indecision state, particularly significant were the lack of self-knowledge (interests, aspirations, talents, etc.) and lack of knowledge on school-career reality, low problem-solving and decision-making abilities, or the presence of barriers to the efficacious use of these processes (Gati, Krausz & Osipow, 1996; Gati, Osipow, Krausz & Saka, 2000; Holland, Daige & Power, 1980; Osipow, Carney, Winer, Yanico & Koshier, 1980; Osipow, 1999). Peterson, Sampson, Reardon and Lenz (1996) underlined the relationship between career indecision and maladaptive approaches to career problem-solving and career decision-making, thus emphasising the role of problem-solving abilities also in the management of choice tasks. In actual fact, problem-solving refers to the cognitive, affective and motivational processes that individuals use to effectively confront and resolve any number of difficult life scenarios (D'Zurilla & Nezu, 1982; D'Zurilla & Goldfried, 1971; Lochman, Wayland & White, 1993).

Interventions suggested in the literature for young adolescents with problem-solving and decision-making difficulties can be divided into two categories. In the first group are interventions that aim to teach general principles of decision-making and to increase reasoning abilities. Examples of this approach are the Personalised Decision Analysis (Brown & Baron, 1991), GOFER (Mann, Harmon & Power, 1988) and ODYSSEY (Adams & Feehrer, 1991). A second type of interventions attempts to improve the adolescents' social problem-solving skills and decisional competencies in various areas of everyday life. Programmes such as the Improving Social Awareness-Social Problem-Solving Project (Elias & Clabby, 1991) and the Life Skills Training (Botvin, 1983) belong to this second group.

Inspired by the second type of training programs and research related to increasing social and problem-solving abilities (Stephens, Hartman & Lucas, 1982; D'Zurilla & Goldfried, 1971) the authors have developed a training program called *Difficulties: No problem!*. This program was expected to serve as a preventive intervention, with effects both on career indecision levels and on abilities that should contribute to avoid the feeling of a widespread sense of indecisiveness.

The goal of the current study was to identify young adolescents according to their levels of academic/career indecision and to work with them on

improving decision-making skills that would extend to both academic/career decisions and other life decisions. It was hypothesised that students with high indecision would improve their problem-solving and decision-making skills, learning to respond with a greater number of adaptive responses in different social situations. In addition it was also predicted that better decision-making and problem-solving abilities would be associated with more accurate reflections on one's future and with better career problem-solving. So for these students higher problem-solving and decision-making competencies should be related to higher levels of commitment and involvement in choice and certainty associated with one's professional identity.

Methodology

Participants and procedure

In two junior high schools, located in a largely industrialised northern Italian province, 156 pupils involved in vocational guidance activities were sampled. The sample included 83 males (52.98%) and 73 females (47.02%), with an average age of 11.68 ($SD = .52$). Of the total sample 74% percent were from middle class and 14% and 12% from lower and upper class families, respectively.

Within this sample the indecision group was identified through a cluster analysis on the responses to the *Ideas and Attitudes on Academic-Career Future Questionnaire* (Soresi & Nota, 2001), and the procedure suggested by Savickas and Jarjoura (1991) was followed. Three groups could be identified. The decided group of pupils was the largest group ($n = 101$), followed by the fairly decided group ($n = 31$). The high indecision group included twenty-four participants (12 male and 12 female).

They were randomly assigned to an experimental group, participating in the intervention program *Difficulties: No problem*, and a control group that did not participate in this program. The socio-economic status of all 24 participants was middle class; and there were no differences in age between the experimental group ($M = 11.71$; $SD = .52$), the control group ($M = 11.62$; $SD = .49$) and the 110 adolescents remaining from the total sample ($M = 11.73$; $SD = .54$). A career counselling psychologist gave the *Problem-Solving Survey* and the *Decision-making Style Survey* to each of the high indecision participants. The experimental and control groups were both assessed in a pre-test phase and a post-test phase, one month after the end of the training program.

The experimental group was given the intervention program by a career counselling psychologist, who was unaware of the research aims. This coun-

sellor was given the teaching format and methodology to be used in training. The training was conducted during regular school hours. Each didactic unit was videotaped to verify adherence to the treatment protocol (the guide to learning) and to enable evaluation of the extent to which the objectives were reached. The control group was following more traditional vocational training activities supported by a career counselling psychologist. These students were given a personalised printout explaining their profile and providing suggestions and possible options. In addition, they did the traditional activities such as reading and discussing educational opportunities, jobs and career decision-making, some guided visits to schools and enterprises were included. Individual counselling was available to those students who required it.

Instruments

Ideas and attitude on academic-career future

This 17-item questionnaire, developed by Soresi and Nota (2001), measures career indecision. It is based on the ideas of Jones (1989), Osipow et al. (1980) and Savickas and Jarjoura (1991). Participants have to rate how much each statement describes their usual way of thinking and behaving on a scale from 1 (*does not describe me at all*) to 5 (*describes me very well*). A series of exploratory and confirmatory factor analyses provided support for a 3-factor structure, accounting for 45.40% of the total variance (Soresi & Nota, 2001). The first factor measures the participant's *Level of assurance associated with self-knowledge and academic/career reality*. This 9-item scale includes items such as "I don't know what to think when I have to decide which is the best school for me". The second 5-item subscale measures the *Level of commitment to and involvement in choice* (locus of control). It includes statements such as "It is useless to think too much about the job I will do when I grow up. One way or another, I will certainly find something to do". The third 3-item subscale addresses the *Level of certainty associated with one's professional identity*. A sample item is "I can't imagine what I will do when I grow up". Scale scores are obtained by summing item response corresponding to each of the three factors, after reversing the scores of negatively worded item. Soresi and Nota (2001) reported adequate internal consistency reliability estimate. Cronbach α values for the three factors were, .84, .61 and .62 respectively. Corresponding reliability estimates in the present study are .83, .64. and .65.

Problem-solving survey

Problem-solving abilities were assessed in accordance with the methodology suggested by Pettit, Dodge and Brown (1988), Lochman, Wayland and White's Social Goal Measure (1993), and Tur-Kaspa and Bryan (1994).

These authors proposed hypothetical events and asked participants how they would deal with each problem, encouraging them to give the greatest possible number of solutions. The participants' answers were coded on the basis of pre-existing categories.

On the basis of these researchers' methods, Nota (1999) devised a series of hypothetical situations often considered problematic by young adolescents. To evaluate that the contrived situations actually described real-life situations adolescents face, informal interviews were carried out with 30 young adolescents. Taking into account the results of these interviews, five situations were chosen to be used in the present study:

- A friend of yours has arrived at school on his new bicycle. It is exactly like the one you very much want to have. You would like to take a ride on it to test it, but you know very well that your friend is not in the habit of lending his things;
- One day, a new student arrives in your school. He often is by himself; you would like to make friends with him;
- A classmate of yours starts mocking you in front of everyone else, and they all laugh at you. This behaviour hurts you very much;
- One of your teachers unfairly accuses you of talking and disturbing the class. You know this is not true, as you were actually doing your work;
- One day, some teachers from a high school come to talk about what is studied at their school and what jobs their students typically get after graduation. Your classmates are a little bored, and one or two of them even laugh. However, you think what the teachers are saying is important and would like to ask some questions.

The different scenarios were written out on cards. They were presented one at a time in random order; the students' reactions were taped in order to carry out the necessary coding at a later time. The experimenter introduced the social problem-solving situations as follows: "I will now present some hypothetical situations. You should imagine yourself in each situation and then answer my questions. There are no right or wrong answers. What matters is that you answer with what you would actually say or do if you found yourself in each situation". The experimenter asked the following questions: "How would you solve this problem?" and "What would you say or do?". These questions were repeated until the student either stated that he/she had nothing else to add or when he/she was silent for an extended period of time.

By analysing the responses, using techniques delineated by Pettit, Dodge and Brown (1988) and by Tur-Kaspa and Bryan (1994), the participants were classified into three categories: adaptive/assertive, maladaptive/aggressive, or passive/avoidance. Each student's answers were tallied for the number of adaptive/assertive, maladaptive/aggressive and passive-avoidance reactions.

In this study two experts independently classified participants' responses to the social problem-solving vignettes. The judges' agreement on the classifications was 95% (the agreement index is equal to the number of agreements/number of agreements + number of disagreements). Responses that were not classified similarly by both judges (5%) were not considered for further analyses.

Students' reactions were classified as adaptive/assertive if the answers indicated the respondent as the agent resolving the proposed problem ("I would do . . .", "I could . . ."). Answers that referred to the student's own rights, opinions, ideas ("I would tell the teacher that it wasn't me talking, as I was doing my work . . .") were also included in this category. The same was true for answers expressing the student's own wishes ("I would like very much to talk with you for a while") and answers that made reference to social exchanges and bargaining ("If you let me take a ride on your bike, I will give you three of my cards for your collection . . ."). Reactions were classified as maladaptive/aggressive in cases when the student expects others to solve his/her problem ("They should keep quiet . . ."), the student's answer belittled or blamed others ("Someone who keeps to himself is a loner, unable to make friends") and if the answer suggested verbal and/or physical aggressiveness ("I would mock them too . . ."). Answers were classified as passive-avoidance if the student blamed him/herself and said it was his/her fault ("I should have sat farther away . . ."), the answer referred to the futility of asserting his/her rights, opinions, ideas ("Teachers are always right . . ."); or the student suggested inaction ("I would not ask to borrow his bike . . .").

Decision-making style survey

The approach in this survey relied on Janis and Mann's (1977) decisional theory, which is grounded on the assumption that a decisional task can be dealt with in a number of more or less efficacious ways. Also the decisional situations devised by Jenkinson and Nelms (1994), who used the same theoretical framework, served as an inspiration. In this type of survey, decisional situations are presented to the participants, who are requested to express what they would do and why they would do it. The evaluator then classifies the answers as characterised by avoidance, hypervigilance or vigilance.

Nota (1999), in line with recent work by Friedman (1991), used twenty situations featuring young adolescents facing dilemmas. Semi-structured interview with 30 subjects confirmed that the proposed situations actually mirrored events that might occur during adolescence. From this preliminary investigation seven situations were selected for use in the present study:

- You want to throw a party for your birthday and would like to invite your classmates and other friends. Your parents, however, are against the idea;

- For some time now, you have had low grades in one important subject. On the last couple of tests you got D's;
- A friend of yours has let you down. Instead of coming to see you as he promised, he went off with some other classmates;
- One of your teachers is asking your classmates about their plans for the future. He/she asks students who still have no clear idea to think it over. Imagine you are one of them;
- Your classmates have organised a trip on Sunday afternoon. You would like to go with them, but have not been asked;
- Your school is organising seven meetings with people of different occupations. Each student may only attend three meetings;
- It is nearly time to enrol at high school. Imagine you are thinking about two different schools you would equally like to attend.

The seven decisional dilemmas were presented and introduced to the participants in the same way as the social problem-solving scenarios. After reading the decisional dilemma aloud, the experimenter asked the following questions: "What would you do?" and "Why would you do it?".

The students' reactions were classified into three categories according to the framework used by Jenkinson and Nelms (1994). After coding the reactions, each student's reactions were tallied by the number of avoidance, hypervigilant, and vigilant answers. The participants' responses to the decisional dilemmas were classified using the same methodology as for the problem-solving survey.

Responses were considered as belonging to the category of avoidance when they referred to decisions made by others ("I would do what my teacher said", "He knows what's best for me"), tended to maintain the status quo or to accept others' suggestions without examining the advantages and disadvantages of such actions ("I wouldn't speak with my friends, if they want to stay by themselves"), did not refer to any possibility of resolving the dilemma ("I wouldn't know what to do"), contained banal or irrational answers ("I will attend all seven meetings"). Students' responses were considered as hypervigilance when they gave an immediate answer without considering the consequences of their actions ("I would phone him immediately to tell him he was rude", "He must understand . . ."), showed a sort of hyper-reaction to the presented event ("I would immediately start thinking about what to do, because I must quickly find an immediate solution"). Students' responses were considered as vigilance when they indicated alternatives to choose from and balanced the different hypotheses ("I could tell my parents that it is important to me . . ."), if they contained a solution that maximises possible advantages ("I could talk with the teacher to try to understand what I should study with greater attention, so I would be able to concentrate on the most

important things”), discussed a need to obtain more information in order to arrive at more informed decisions (“I would ask my parents why they don’t agree with me, so I could think about what to do”).

Intervention program

The program *Difficulties: No problem!* includes 15 didactic units: Overview of the program, Identifying and defining problems, Thinking about consequences, Coping styles, Problems and goal determination, Possible solutions, Making a choice, Achieving what has been decided, Characteristics of the effective problem-solver, Passive, assertive and aggressive behaviours, How to express wishes, How to make friends, How to get collaboration or help of others: The social contract, How to deal with aggressiveness of others, and finally, Synthesis and conclusions. The program included 15 two-hour weekly sessions, with in addition 30 hours of extracurricular activities.

For each unit specific goals and other elements were defined. The description of the didactic unit on Problems and Goals Determination can illustrate this:

- *Conditions*: (a) a mastery task made up of multiple-choice items related to the definition of a goal, the reasons why it is important to transform problems into goals, the strategies that might facilitate this transformation, and (b) a request to describe two personal problem situations;
- *Behaviour*: (a) the student arrives at his or her goal, explains why it is important to transform problems into goals (this facilitates the search for a solution, clarifies ideas, facilitates the creation of hypotheses, increases motivation), determines solution strategies (asking questions like: “what do I want”, “where”, “when”; and implementing a solution, “to whom should I communicate my solutions”, etc.), and (b) the student defines at least one goal for each problem situation;
- *Mastery criterion*: the goal is attained if the subject (a) defines at least one personal goal, gives two reasons why it is important to transform problems into goals, and develops two strategies to do so, and (b) describes and transforms at least one problem situation into a goal.

The presence of the *mastery criterion* made it possible to verify in each meeting whether the expected goals were actually reached with the participants. To do this, *ad hoc* criterion tasks for the evaluation of learning were used together with grids that enabled the observation of behaviors and abilities taught in each unit. When the mastery criterion was not achieved, personalized interventions were carried out before the beginning of the following didactic unit.

The making of methodological and didactic choices primarily relied on learning theories and contributions by authors who emphasize the import-

ance of establishing conditions to facilitate learning and its generalisation (Smith Christopher, Nangle & Hansen, 1993; Nota & Soresi, 1997). A guide to learning was developed for each didactic unit which described the verbal and non-verbal behaviours the experimenter should use throughout training. A variety of teaching techniques were employed: instruction, to supply definitions and to describe the appropriate knowledge and skills as well as the advantages associated with their enhancement (Schumaker, Hazel & Pederson, 1988; Nota & Soresi, 2003); modelling to show students how to implement the target skills (Carter & Sugai, 1988); role-playing to train the adolescents to deal with difficult situations by producing an adaptive response (Gaylord-Ross & Haring, 1987); social reinforcements and informational feedback (Ladd, 1981; Soresi & Nota, 2000). Other more cognitive teaching techniques were used, such as self-observation, self-assessment, and the cognitive expectation of different situations (Goldstein, 1988). To insure the maintenance and generalisation of knowledge, students completed homework assignments, which required them to apply what they had learned to various contexts – at home, in school, etc. (Fox & McEvoy, 1993). Some suggestions by Brown and Krane (2000) were also taken into consideration. In some didactic units participants were, e.g., asked to describe operationally, in a written form, their problems, the goals they wanted to achieve, several problem-solving options, comparisons between these different possibilities and plans for the implementation of the solution that was considered the most advantageous. In this way the adolescents had the opportunity to discuss their goals and plans individually with the trainer and to receive specific feedback.

Results

Pre-test data

The variance analysis indicates significant difference in the mean scores of the high indecision group ($N = 24$) and the rest of the participants ($N = 132$). High indecision students score significantly lower than the rest of the group on *Level of assurance associated with self-knowledge and academic/career reality* ($F(2,129) = 7.147, p = .001$), *Level of commitment to and involvement in choice* ($F(2,129) = 9.920, p = .001$), and *Level of certainty associated with one's professional identity* ($F(2,129) = 6.604, p = .003$).

The experimental and control group within the high indecision students did not differ on pre-test levels from the aforementioned variables. There was also no significant difference in levels of avoidance ($F(1,22) = .423, p = .522$], hypervigilance ($F(1,22) = .27, p = .606$] or vigilance ($F(1,22) = .092, p = .764$) when dealing with decisional dilemmas. The behaviour related to

dealing with social problem-solving situations did not differ for these groups. There was no significant difference in the mean scores for maladaptive/aggressive ($F(1,22) = .082, p = .778$), passive/avoidance ($F(1,22) = .107, p = .747$) and adaptive/assertive ($F(1,22) = .298, p = .590$).

Reliability of intervention

Two independent judges examined the video recordings of the didactic units to determine the degree of correspondence between what had been planned according to the treatment manual and what was actually achieved by the teacher. First the extent to which the judges identified the same number of phases in each unit was assessed. An agreement index was calculated. This index gave an agreement of 96% between the judges. For the phases identified by both judges teaching techniques were also verified. This agreement index, calculated in the same way, was 92% (Di Nuovo, 1995; O'Reilly & Glynn, 1995).

Post-test data

With regards to the criterion verification, for more than half the units ($N = 8$) all students reached the expected mastery criterion; the lowest success rate was for the unit on Thinking about Consequences with only 9 students reaching the expected level of mastering.

To check for differences between the experimental and control groups a series of ANCOVAs were carried out, comparing the groups' post-test means (see Table 1), with pre-test scores used as covariates (Cook & Campbell, 1979; Tabachnick & Fidell, 1989). This analysis was executed for the number of adaptive or maladaptive reactions produced in the presence of the social problem-solving situations, the decisional dilemmas, and for the subscale of the *Ideas and Attitudes on Academic-Career Future* questionnaire (Soresi & Nota, 2001). The effect size is assessed by converting the η^2 into f-values by using Cohen's (1988) conversion table (p. 283). Cohen defines medium effect if the f-value is larger than .25 and a large effect if the f-value is larger than .40. The probability to detect a significant effect (power) can also be defined on basis of the f- and F-values and n (Cohen, 1988; Kramer & Thieman, 1987). Effect size is defined as the amount of variance explained by the intervention (Cohen, 1988). It can actually be considered a particularly significant index of the capacity of the intervention to modify the examined characteristics of the participants in the experimentation. Power expresses the likelihood of not neglecting an important effect, which in our case refers to the intervention being capable of producing the expected outcomes.

Table 1. Reactions to the social problem-solving situations and to the decisional dilemmas and Evaluations of career decidedness: means and standard deviations for experimental and control group participants at pre- and post-test

	Pre-test				Post-test				ANOVA F(1,21)	eta ²	f-value
	Exp. Group		Contr. Group		Exp. Group		Contr. Group				
	m	SD	m	SD	m	SD	m	SD			
<i>Social Problem Solving</i>											
Adaptive/assertive reactions	4.25	1.28	3.91	1.67	6.16	1.11	4.25	1.42	49.459**	.70	1.528
Passive/avoidance reactions	4.25	1.71	4.50	2.02	2.50	1.00	4.66	1.61	94.043***	.81	2.000
Maladaptive/aggressive reactions	1.30	1.25	1.16	.93	.70	.67	1.41	.79	12.985***	.40	.816
<i>Decisional Dilemmas</i>											
Avoidance reactions	3.33	1.15	3.00	1.34	1.83	.57	3.16	.83	64.008***	.75	1.528
Hypervigilance reactions	.77	1.09	1.00	.85	.44	.52	.83	.83	.270	.06	.253
Vigilance reactions	3.16	1.93	3.00	1.47	4.83	.83	2.83	.93	66.556***	.76	1.528
<i>Career decidedness</i>											
Level of self-knowledge and academic-career reality	24.83	8.73	25.66	8.11	32.33	6.54	29.66	8.34	.890	.04	.204
Commitment to and involvement in choice	16.25	5.24	14.75	4.02	21.00	4.15	17.25	4.02	4.208*	.16	.420
Level of certainty in professional identity	8.50	1.31	8.16	2.97	9.91	3.02	10.33	3.62	.371	.01	.101

Note. Experimental Group: N = 12; Control Group: N = 12.

*p < .05, **p < .01, ***p < .001.

There are significant differences between the pre- and post-test results for the total number of adaptive/assertive, maladaptive/aggressive and passive-avoidance reactions. Other significant differences are found in the number of avoidance and vigilant reactions. No differences were found, however, in the number of hypervigilant reactions. Students in the experimental group produce a greater number of assertive/adaptive reactions to difficult situations and a lower number of maladaptive responses in the post-test situation than they did at pre-test. The size of the effects obtained can be assessed as being between medium and great (Cohen, 1988). The variance explained by the intervention variable is remarkable. In addition, the probability of detecting a significant effect when the effect truly existed was high: the power observed was between .92 and .99 (Kramer & Thiemann, 1987). The proposed training can therefore be said to have been successful in increasing experimental group participants' abilities to react in an adaptive way to difficult situations. This is also confirmed by the high power observed.

Finally, with regard to academic-career decision, the only difference found between the two groups was for the scale *Commitment to and involvement in choice*. The experimental group expressed a greater sense of commitment to and involvement in the decision-making process. In this case, however, the effect size was small and the power observed was only .50. Though a statistical significance was recorded, the *effect size* and the *power* observed suggest caution in endorsing efficacy of intervention.

Conclusions

The data allow for the conclusion that the training intervention "Difficulties: No problem!" seem to produce significant changes in the experimental group of students. These students are more prone to produce effective solutions to the problem situations with which they were confronted and to resolve decisional dilemmas by resorting to vigilant styles. Indeed, the most adept decision-makers are those who manifest a vigilant approach, as characterised by the gathering of information, and by the identification of numerous possibilities and the advantages of each. But they also show a greater capacity to produce adaptive solutions through assuming greater responsibility, presenting their needs to others, and enlisting support. These skills should help the young adolescents to better manage difficult situations (Chartrand et al., 1993; D'Zurilla & Chang, 1995). Burnett, Mann and Beswick (1989) and Friedman and Mann (1993) claim that adolescents that use a vigilant decisional style are better able to make advantageous choices and less likely to engage in behaviours that may jeopardise their health, social relations and career development.

Moreover, they also seemed more prepared to analyse the issue of academic career choice, recognising the importance of their commitment and effort as crucial to making more appropriate and advantageous choices for themselves. These participants manifested a more internal locus of control by taking more responsibility for gathering information and for exploring a range of professions before making a choice. Such an approach is also characterised by greater cognitive effort in weighing options and arriving at a decision (Taylor, 1982).

To sustain the effective adequacy of this result more subjects should have been involved. In particular with respect to using power analysis (Kramer & Thiemann, 1987) in these circumstances reiterations of this research is recommended. On the other hand, the data related to this project are in line with Luzzo, Funk and Strang's (1996) results. These authors assert that to stimulate a revision of the locus of control a cognitive restructuring is necessary. The young adolescents in the experimental group were trained to see a problem from diverse points of view and to analyse the consequences associated with problem solution and the avoidance of difficulties.

In terms of certainty with professional identity, no improvements were observed. Also contrary to expectations, no improvements were noted in self-knowledge or in academic-career reality. In the same way a more traditional intervention was not successful. It is not sufficient to discuss career choice to reduce indecision. These components, which are important to the process of academic career choice, may require interventions different from those instituted in the proposed training program. To this aim other sections could be useful in which the adolescents could be guided to write their future career goals and future planning; in this way the trainer could provide opportunities to discuss their goal individually, teach the ability to gather specific relevant work-related information and give specific feedback (Brown & Krane, 2000; Reardon, Lenz, Sampson & Peterson, 2000).

In general, it can be concluded that the proposed type of intervention seems to supply high indecision groups of students with essential resources to deal with diverse decision-making tasks and to increase their commitment in a difficult choice, i.e. the career choice. It seems to increase those basic problem-solving and decisional skills on which it could be necessary to continue to work to increase other specific competencies useful to a more efficacious career decision-making. Obviously this is adequate for adolescents that experience indecision; the same intervention with decided or fairly decided adolescents, who possibly already have those competencies, may be irrelevant. To this aim further research is necessary.

However, the project contained other limitations. First, a satisfactory check of training efficacy should not limit itself to recording the changes that

occurred a few weeks from the end of treatment, but should conduct follow-ups six and twelve months later to verify maintenance and generalisation of the abilities focused on in training (Hughes & Sullivan, 1988).

Furthermore, because there is an interest in interventions aimed at enhancing competency in managing difficult situations and at reducing the risks associated with maladaptive choices, the assessment of the validity of the intervention program should also include the verification of the extent to which these abilities result in increased benefits (reinforcements) in their usual contexts (e.g. family and school) and also in decreased drawbacks (punishments) (Hawkins, 1991). Doing so will require evaluations from significant others such as teachers, classmates and the parents of students. This should lead to the assessment of actual decreases in the risk of making maladaptive choices (Winnett, Moore & Anderson, 1991; Di Nuovo, 1995). All of these should be topics for future research.

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