

BABES - BOLYAI UNIVERSITY
THE SCHOOL OF PSYCHOLOGY AND EDUCATIONAL SCIENCES

**PSYCHOLOGICAL IMPLICATION OF CAREER
DECISION PROCESS**

DOCTORAL THESIS

- Summary -

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KEY WORDS: career self-efficacy, career decision-making difficulties, factors of career decision, vocational interests, training program for career development, career counseling, career development, occupational information, inconsistent information, decision process.

The theoretical framework – present and perspectives on career self-efficacy

The literature study in conjunction with the reality from Romanian schools, led to the reasearch of career self-efficacy in the case of Romanian teens, linked to the difficulties faced by them during career decision making process. Foreign literature from the last 10 years made numerous references to the subject of career self-efficacy, topic less studied in the research field from our country.

The research aims to review two important dimensions related to career decision process – self-efficacy and difficulties – specific to romanian population – age between 18 and 25. In same time, we selected and focused on the last year high-school students – the weakest link in the chain – segment on which we developed and implemented a training program. The purpose of this training was to develop career self-efficacy and to diminish career decision-making difficulties.

Career counseling in Romania

According to the legal measures adopted in Romania in the last years,by the Ministry of Education, counseling and guidance areas were constantly situated in the center of educational policies and were introduced into curriculum from 1998.

In the Counseling and Guidance curriculum for high-school level there are five general competencies and three of them focuses on specific vocational guidance abilities:

1. Exploration of personal resources that can influence career planning
2. Integrating relational abilities for personal and professional development
3. Developing a personal and professional developing project.

Self-efficacy in the theory and the practice of career counseling and career development

Researches have shown that self-efficacy in deciding on a career is strongly related to the current difficulties in decision making and the implementation of the decision within a certain career. In this respect, several studies highlighted that the theory on self efficacy can be used as a basis for compiling career intervention projects (for example Betz, 1992), further on the Career

Decision-Making *Self-Efficacy Scale*, the long version with 50 items or its short version with 25 items, to be used as the dependent variable to compare whether the career development intervention was successful or not (Betz 1992, Betz and Luzzo, 1996, Peterson 1993).

Thirteen years after the first use of the career self-efficacy concept by Betz and Hackett in 1994, Lent, Brown and Hackett have developed a comprehensive theory on the academic and career related behavior, a theory that connects the main elements of Bandura's theory with other career theories (Gottfredson, Holland, Krumboltz, Super). Lent and colab. (1994) have extended and adapted the theory and research on career and educational self-efficacy.

The Career Decision Making Self Efficacy Scale (Betz&Taylor, 2001) and the Career Decision-making Difficulties Questionnaire (Gati, Krausz și Osipow, 1996) have been validated on Romanian population.

For the two instruments, EFA and PA have been carried out, and the model was examined through AC. Also, construct validity, predictive validity and reliability was checked and the standards for Romanian population were set. The solutions I found were very similar to those proposed by the authors and to other research in foreign expert literature.

Career self-efficacy and difficulties on teenagers – implied factors

Research goals and hypothesis

This first research step is a descriptive one. We intended to assess the examined population in terms of career decision self-efficacy and career choice difficulties – two important dimensions pertinent to career decision.

This step is considered as extremely necessary as there is a small amount of research dedicated to these issues in our country. Furthermore, these two well known instruments for career decision assessment (according to methaanalytical studies published in the most important scientific journals - Journal of Vocational Behavior, Journal of Career Assessment, Journal of Career Development) are only now introduced in the research field in our country.

It is very important to establish the levels of career self-efficacy and career decision-making difficulties for Romanian population, in general, and for Romanian adolescents, in particular, before any other research on this topic.

In this study, the variables of interest are: gender, living area (urban vs. rural), level of education, high-school profile, college majors, career decision-making stage (decided vs. undecided). There were used descriptive statistics and inferential statistics as well for the evaluation of statistical differences. The idea of this study is to offer a clear and precise image on the decision-making abilities of Romanian adolescents. Over 800 participants were selected for the descriptive research and thus, the results can be considered as valid and trustworthy.

Method

Participants

819 subjects were involved in this study, of which 545 were high-school students, 212 college students and 62 vocational school students. All of them were tested with CDMSES. The CDDQ was completed by 490 high-school students, 172 college students and 62 vocational school students. Among these, 325 were males and 399 females. 97 participants were asked about the living area – urban vs rural -, of which 50 had rural origins and 46 urban ones.

Materials

There were used two instruments, as mentioned before, validated on Romanian population: Career Decision-Making Self-Efficacy Scale (Betz and Taylor, 2001) and Career Decision-making Difficulties Questionnaire (Gati, Krausz și Osipow, 1996).

Results and discussions

Gender differences were verified, differences according to origins for career self-efficacy and career decision-making difficulties, differences due to levels of education and group differences for the same variables. The study was focussed in revealing differences regarding career self-efficacy and career decision making difficulties for students that attend different high-school profiles and for students that have chose different college majors. Also, we assessed the differences in career self-efficacy and career decision-making difficulties according to the career decision stage of the participants.

There were no significant differences in career self-efficacy and career decision-making difficulties depending on gender. When studying the level of difficulties, there have been

accounted statistically significant differences, but with a low effect size ($d=0,194$) in the case of *inconsistent information* subscale.

Surprisingly there were statistically significant differences for career decision-making self-efficacy and its subscales when variable regarding origins was considered. Higher scores were found in the case of participants with rural backgrounds. On the other side, rural students have lower scores on career decision-making difficulties, except for the subscale concerning difficulties due to the lack of preparation in choosing a career.

Regarding the educational level, there were significant differences between high-school and college students for the global scores and for all the subscales, with low and medium effect sizes and satisfactory statistical power. Between high-school students and vocational students there were also significant differences, with low to medium effect sizes for the global score and for the *gathering information* subscale.

In the case of career decision-making difficulties, significant differences have been found when comparing high-school students with college students. The significant differences were both for the global scores and for the subscales at $p<.01$. In all cases, the effect sizes were low to medium.

The research showed also significant differences between college students and vocational school students for all the variables involved, at a $p<.01$ with high effect sizes for the degree of preparation and lack of information subscales, for the global score and for inconsistent information subscale.

When comparing the scores for the two variables of interest depending on the high-school profile, the effect sizes were low and thus we will discard the practical meaning of these results.

Career decision-making self-efficacy is more developed for the students that choose their major in economics, followed by students that majored in psychology and theology. Significant differences were found at the global level of career self-efficacy, but with a low to medium level of effect size and a modest statistical power.

In the case of career decision-making difficulties, there were significant difference for the global score and for the three subscales at a $p<.01$, with very high effect sizes and with a very good statistical power.

There was reasonable to verify the differences in career self-efficacy and the levels of career decision-making difficulties depending on the career decision-making stage of the participants. We anticipate that the decision at a declarative level does not imply necessarily action in career choice. Taking account that the participants are adolescents and that the majority was not guided consistently and systematically towards a pertinent career decision, this analysis is important. Significant differences were obtained in the case of career decision-making self-efficacy and its subscales and also for career decision-making difficulties, except for the subscale that reflects the level of preparation for this kind of decision.

The vocational interests of teenagers. Their role in self-efficacy and difficulties related to career decision-making process

Goals

The main goal of this study highlights the existent differences in realistic, investigative, social, artistic, enterprising and conventional vocational interests for different groups. Thus, these differences were evaluated for adolescents depending on gender and level of education. Another comparison aimed at the vocational interests of high-school students that attend different educational profiles. The purpose of the final analysis was revealing the predictive and explanatory value on career decision-making self-efficacy of the variables measuring vocational interests and career decision-making difficulties.

Hypothesis and design

Hypothesis 1: There are significant differences regarding realistic, investigative, artistic, social, enterprising and conventional vocational interests depending on the participants' educational level and gender.

Hypothesis 2: Realistic, investigative, artistic, social, enterprising and conventional vocational interests have different levels for high-school student that attend different educational profiles.

Hypothesis 3: Realistic, investigative, artistic, social, enterprising and conventional vocational interests have different levels depending on students college majors.

Hypothesis 4: Career choice difficulties are predictors for the level of career decision-making self-efficacy after eliminating the influence of vocational interests.

Multilinear regression; method: hierarchical; predictive and explanatory purpose

Method

Participants

In this study 305 participants were involved, 44 attend vocational schools in their senior year, 143 are senior high-school students and 118 are college students in their first year.

Materials

Career Decision-Making Self-Efficacy Scale (CDMSES), the *Career Decision-making Difficulties Questionnaire (CDDQ)* and the *SDS – Holland* were used.

Results and discussions

The means for realistic vocational interests were higher for the vocational school students in comparison with high-school and college students. Analyzing the mean scores obtained by the male and female participants, boys tested 10 points higher on realistic interests than girls did. The mean scores for investigative interests differ depending on the educational level of participants, higher scores were found for college students, followed by high-school students and the lowest scores were found for vocational school students.

The mean scores for gender differences were similar; girls registered 2 points higher than boys did. Artistic interests are more developed for college students, followed by high-school students and the least developed artistic interest was for vocational school students. Artistic interests are higher developed for girls than for boys.

Social interest is higher for students, followed by high-school students and finally for vocational school students. Depending on gender, girls score higher on social vocational interests than boys.

The mean scores for enterprising vocational interests are higher for high-school and vocational school students than for college students. Gender differences reveal higher scores for boys than girls for enterprising interests.

Statistically significant differences were obtained for investigative and enterprising interests depending on the educational level. Depending on gender, significant differences were revealed for realistic, artistic and social interest.

As a result of hierarchical regression analysis, it has been proven that career decision-making difficulties are valid predictors of career self-efficacy, after eliminating the influence of vocational interests.

The results of multilinear hierarchical regression models analyzed in this study can be summarized in the following ideas:

- for the entire sample of adolescents (senior high-school students and first year college student), the development of conventional interests explains significantly both the general level of career decision-making self-efficacy and the level of self-efficacy concerning the decisional process;
- realistic, investigative, artistic, social and enterprising interests DO NOT explain the variance of career decision making self-efficacy for the entire sample of participants;
- difficulties due to inconsistent information about the future career have a predictive value both for the global career decision making self-efficacy, and for the level of the decisional process itself;
- artistic interests explain, in a negative way, the level of global career decision self-efficacy and the career decision process itself, for college students;
- in the case of students, difficulties caused by inconsistent information are a significant predictor of global self-efficacy, of career decision-making self-efficacy and of self-efficacy for gathering information;
- for high-school students, vocational interests and career decision-making difficulties /do not have a predictive value for career decision making self-efficacy.

A training program efficiency on developing career decision capacity for high-school students

The aim of this study is to examine the extent to which an intervention program for career development may increase the confidence of adolescents' in their own abilities for future career decisions. Another objective derived from this one, is to verify the impact of this training on reducing the level of difficulties encountered by adolescents in the choice of future careers.

Hypothesis and Research Design

The training for career development leads to higher levels of self-efficacy when it comes to deciding for a future career.

Mixt research design (pretest-posttest, with control and placebo groups).

Methods

Participants

Table 1. Frequencies for participants regarding gender and high-school profile

Profile	Linguistic		Maths-informatics		Pedagogical		Total
	Boys	Girls	Boys	Girls	Boys	Girls	
experimental	-	-	11	15	3	22	51
control	7	13	6	12	-	25	63
placebo	11	13	-	-	-	-	24
Total	18	26	17	27	3	47	138
	44		44		50		

Instruments

- Career Decision-Making Self-Efficacy Scale* (CDMSES, Betz și Taylor, 2001)
- Career Decision-Making Difficulties Questionnaire* (CDDQ, Osipow și Gati, 1998)

Procedure

Pre-testing for all six classes took place during the period from December to January of the school year. The intervention for both experimental groups and the placebo group was conducted over 10 weeks, consisting of a meeting of 50 minutes per week.

The intervention was designed based on Crites's career maturity theory which underlies the Career Decision-Making Self-Efficacy Scale. Thus, we considered it important to address the following five areas: self-knowledge and self-evaluation, information about occupations, selecting goals, planning and solving problems. Each theme has been allocated two meetings. The placebo group was dealing with the theme *conflict and communication*. Post testing was conducted during March and the follow-up phase in early May.

Results

We assume that the training for career development leads to higher levels of decision for career self-efficacy.

Variables measured, for the three groups, in all three moments, are normal distributed (verified by Kolmogorov-Smirnov test, $p > .05$).

Table 2. Means, standard deviations and one-way ANOVA for CDMSES scores, pretest

Variables	Group	N	mean	s.d.	F	p
Career decision self-efficacy	control	63	83.22	11.37	0.612	.544
	experimental	51	84.98	10.06		
	placebo	24	85.95	14.49		
	Total	138	84.34	11.48		
Decision process	control	63	36.31	4.94	0.679	.509
	experimental	51	37.11	6.06		
	placebo	24	37.87	7.43		
	Total	138	36.88	5.84		
Occupational informations	control	63	27.52	4.93	1.32	.271
	experimental	51	28.90	3.68		
	placebo	24	28.37	5.12		
	Total	138	28.18	4.55		

$p > .05$, no significant differences. Groups are homogeneous in pretest, regarding career decision self-efficacy.

Table 3 Means, standard deviations and one-way ANOVA for CDMSES - *posttest*

Variables	Group	N	mean	s.d.	F	p	Effect size (f)	Statistical power
Career decision self-efficacy	control	63	80.44	12.55	28.956	.001	0.653	.999
	experimental	51	96.21	7.66				
	placebo	24	89.08	12.76				
	Total	138	87.77	13.10				
Decision process	control	63	34.50	5.63	34.4	.001	0.691	1
	experimental	51	42.66	4.01				
	placebo	24	39.41	6.5				
	Total	138	38.37	6.42				
Occupational informations	control	63	27.38	5.18	13.726	.001	0.449	.998
	experimental	51	31.94	3.58				
	placebo	24	29.00	5.05				
	Total	138	29.34	5.04				

- significant differences for all dimensions of career self-efficacy; important effect sizes
- Games-Howell post hoc test, in case of CDMSES – *global* - $p < .01$ for differences between experimental and control groups ($d=1.47$); experimental and placebo groups, ($d=0.41$) and placebo and control groups ($d=0.37$).

- In case of *decision process scale*, multiple comparisons with Games-Howell post hoc test $p < .001$ for experimental and control groups ($d=1.62$) and $p < .01$ for placebo and control groups ($d=0.46$).
- In case of *occupational informations scale*, Hochberg GT2 post hoc test we obtained $p < .05$ for experimental and placebo ($d=0.41$) and $p < .001$ for experimental and control groups ($d=0.96$).

In follow-up means remain higher for experimental group compared with those for placebo and control groups for CDMSES global score and subscales.

Table 4. Means, standard deviations and repeated measures ANOVA for *CDMSES* (global score)

Group	Moment	N	mean	s.d.	F	p	Effect size part η^2	Statistical power
experimental	Pretest	51	84.98	10.06	110.93	.000	.689	1.00
	Posttest	51	96.21	7.66				
	Follow-up	51	94.56	6.29				
control	Pretest	63	83.22	11.37	5.798	.014	.086	.863
	Posttest	63	80.44	12.55				
	Follow-up	63	79.38	11.90				
placebo	Pretest	24	85.95	14.49	5.666	.022	.198	.839
	Posttest	24	89.08	12.76				
	Follow-up	24	89.00	8.51				

Significant results for all three groups, but important effect size for experimental group only. Results are similar for CDMSES subscales.

Results obtained for CDDQ scores – Career Decision-Making Difficulties Questionnaire.

Table 5. Means, standard deviations and one-way ANOVA for CDDQ - *posttest*

Scale	Groups	N	mean	s.d.	F	p	Effect size (f)	Statistical power
CDDQ global	control	63	137.42	43.62	11.692	0.001	.405	.992
	experimental	51	102.27	31.93				
	placebo	24	135.04	47.74				
	Total	138	124.02	43.54				
Inconsistent informations	control	63	46.41	17.74	11.933	0.001	.403	.991
	experimental	51	31.86	14.01				
	placebo	24	47.25	21.33				
	Total	138	41.18	18.49				
Lack of career informations	control	63	61.30	24.22	11.787	0.001	.403	.991
	experimental	51	40.90	16.45				
	placebo	24	56.45	28.97				
	Total	138	52.92	24.36				
Lack of readiness	control	63	23.47	8.43	0.206	0.814	.054	.081
	experimental	51	22.47	8.21				
	placebo	24	23.12	8.37				
	Total	138	23.04	8.29				

Significant results with medium effect sizes for CDDQ and subscales, except for lack of readiness ($p > .05$);

Games-Howell post hoc test indicates significant differences between experimental and control groups for CDDQ global scores ($d=0.944$), experimental and placebo ($d=0.545$); Hochberg GT2 test indicates statistically significant results for inconsistent informations scale for experimental and control groups ($d=0.928$) and experimental and placebo groups ($d=0.577$). Regarding lack of information scale, we obtained significant differences for experimental and control groups, $p=0.001$, $d=1.033$.

Means level maintained in follow-up.

Table 6. Means, standard deviations and repeated measures ANOVA for CDDQ scores

Group	Moment	N	mean	s.d.	F	p	Effect size part η^2	Statistical power
experimental	Pretest	51	129,45	42,62	101.358	.000	.670	1.00
	Posttest	51	102,27	31,93				
	Follow-up	51	101,39	26,40				
control	Pretest	63	133,74	44,64	.937	.395	.015	.209
	Posttest	63	137,42	43,62				
	Follow-up	63	137,98	41,38				
placebo	Pretest	24	136,83	47,51	18.416	.000	.445	.991
	Posttest	24	135,04	47,74				
	Follow-up	24	127,63	39,24				

Significant results and important effect size for experimental group and placebo group. Results are similar for the three subscales of CDDQ.

Discussions

The most important effect of training on career development (on the five modules that were built and CDMSES) on reducing the degree of indecision is towards increasing the compatibility and clarifying the information. Gathering the information on career (decision-making, information about one's self, information about occupations) is deficient among Romanian teenagers; from the means analysis of the Romanian population to CDMSES.

Fukuyama, Probert, Neimeyer, Nevill and Metzler (1988, apud Betz and Taylor, 2001), conducted a study that assessed the effect of a program on computer assisted career guidance (DISCOVER, Rayman and Bowsbey, 1977, apud Betz and Taylor, 2001) both on self-efficacy in the decision making when it comes to a career and the extent to which students contribute to the decision regarding their future career. The obtained results indicate an increase in CDMSES scores and reduction of the indecision among students who participated in the intervention. Therefore, the expectations formulated in the research's hypothesis are empirically supported by other research results.

The results obtained from this study indicate the importance of modular career development interventions for the high school students. It appears that such interventions may have direct effects on

increasing the confidence that students can make appropriate decisions for their future career (in terms of process and level of information) and indirect effects on reducing the difficulties perceived by the students, related to the choice of future careers. The indirect effects were found at the improvement of the readiness level of decision making about a future career decision, at the reduction of the generalized indecision, the compatibility of the information about themselves, about jobs, about values and work interests.

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