Effects of an Educative Model in Socially Responsible Behavior and Other Psychological Variables

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Abstract—The eudaimonic perspective in philosophy and psychology suggests that a good life is closely related to developing oneself in order to contribute to the well-being and happiness of other people and of the world as a whole. Educational psychology can help to achieve this through the design and validation of educative models. Since 2004, the University of Concepcion and other Chilean universities apply an educative model to train socially responsible professionals, people that in the exercise of their profession contribute to generate equity for the development and assess the impacts of their decisions, opting for those that serve the common good. The main aim is to identify if a relationship exists between achieved learning, attitudes toward social responsibility, self-attribution of socially responsible behavior, value type, professional behavior observed and, participation in a specific model to train socially responsible (SR) professionals. The Achieved Learning and Attitudes Toward Social Responsibility Questionnaire, interview with employers and Values Questionnaire and Self-attribution of SR Behavior Questionnaire is applied to 394 students and graduates, divided into experimental and control groups (trained and not trained under the educative model), in order to identify the professional behavior of the graduates. The results show that students and graduates perceive cognitive, affective and behavioral learning, with significant differences in attitudes toward social responsibility and self-attribution of SR behavior, between experimental and control. There are also differences in employers' perceptions about the professional practice of those who were trained under the model and those who were not. It is concluded that the educative model has an impact on the learning of social responsibility and educates for a full life. It is also concluded that it is necessary to identify mediating variables of the model effect.

Keywords—Educative model, good life, professional social responsibility (SR), values.

I. THEORETICAL FRAMEWORK

A. Positive Psychology and SR Behavior

SUSTAINABLE development is the process by which the economic, social and environmental needs of the current generation are satisfied without jeopardizing future generations' satisfaction [1]. According to Morros and Vidal [2], sustainable development is a macroeconomic concept and corresponds to the whole of SR behaviors of all actors in society.

SR is a prosocial behavior [3] that benefits people,

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contributing to their survival and development, and intends to mutually benefit [4]. It is a voluntary behavior to which the person can choose when they are able to reconcile the satisfaction of their own needs with the contribution to the satisfaction of the needs of others, which contributes to their own well-being [5]. From the educational perspective, it can be defined as a generic competence; that is, as a complex system of knowledge, integrated by the cognitive, affective and behavioral dimensions, which can be observable in performance, and implemented and transferred to different contexts [6].

The study of the positive of human experience can be understood from the analysis of positive experiences, such as happiness and satisfaction with life; from the study of psychological strengths and from the analysis of the characteristics that shape and determine positive organizations, such as families, schools, etc. [7]. From this point of view and following the approaches of positive psychology, SR is a behavior valued as positive, which constitutes a desirable strength in human beings [8] because it contributes to their well-being and to that of the organization in which they participate [9], as well as to the well-being of others and even to those who have not yet been born.

B. Educational Model to Form SR People

The University of Concepción of Chile (UDEC) is an institution of secular higher education with a role and public responsibility, founded by the community of Concepción, whose mission is the integral and pluralistic formation of people; the generation, adaptation and transmission of knowledge, and the creation and cultural interaction through a permanent link with the environment and its commitment to regional and national development in a context of integration and globalization [10]; in 2016, the institute numbered 27,344 students and 1,597 academics, and offers 90 undergraduate degrees that can be classified in three areas: chemical-biological, physical-mathematical and social-humanities. Since its creation, it assumes the mission of forming integral professionals, who in their professional act show excellence in the discipline and an attitude oriented towards the common good. The year 2001 began the design, implementation and validation of the Program of Studies on Social Responsibility, under the Vice–rectory unit. The aim of the program was the development of an educational model to form SR professionals. Considering that SR behavior is a multidimensional competence, for its education a mixed

educational model is chosen that, on the one hand, integrates the generic and disciplinary aspects into curricular modules, on the other, incorporates specific and complementary modules for the development of the generic competence [11], implements formal institutional actions that students can access frequently and voluntarily, which are promoted by student support services [12]. The educational model for social responsibility education (MSRE) proposes cooperative learning from learning communities [13], for the training of academics and collaborative learning among students, guided by academics trained in the MRSE, in the methodological strategy of learning and service and authentic evaluation. With students, it incorporates SR into two compulsory modules of each of the training cycles (basic, bachelor's and professional), emphasizing the cognitive dimension of SR in the first training cycle, the affective dimension in the second training cycle and the procedural or behavioral dimension in the third training cycle. It also offers complementary, interdisciplinary, voluntary modules to deepen learning of social responsibility. With the academics, it implements a permanent training program that includes participation in a postgraduate certificate in social responsibility, participation in a learning community and optional participation in diplomas to deepen the subjects [14].

The following research questions arise: What are the effects generated by MRSE in students and graduates of the University of Concepción? Is there a difference between students receiving MRSE and those who do not?

II. AIMS

General: To identify effects of an educational model to form socially responsible professionals (MRSE).

Specifics:

1) To compare attitudes towards SR, attribution of SR behavior and values, before and after treatment, in those receiving the MRSE.
2) To determine if there are significant differences between those receiving the MRSE and the comparison group, with regard to attitudes towards SR, self-attribution of SR behavior and values associated with SR.
3) To observe differences in the perception of learning achieved between those receiving the MRSE and the comparison group.
4) To identify the employer's perception of the professional behavior observed in the group receiving the MRSE and the comparison group.

III. VARIABLES IN STUDY

- Independent variable: Participation in an educational model to form socially responsible professionals (MRSE)
- Dependent variable: Perception of achieved learning; attitudes towards social responsibility; attribution of SR behavior; values associated with social responsibility; and, professional behavior observed by employers.

IV. HYPOTHESIS

- H1: The students of the group that receives treatment present in the posttest, levels of self-attribution of SR behaviors, values and attitudes associated with social responsibility, higher than the levels presented in the pretest.
- H2: There are significant differences in the posttest in the self-attributed frequency of SR behaviors, attitudes and values associated with SR, between the group receiving treatment and the comparison group, in favor of the first.
- H3: Students receiving treatment scored higher than those in the comparison group in self-perception of professional SR learning.
- H4: Employers perceive more SR professional behavior in the graduates who received the educational model compared to those who did not receive it.

V. METHOD

A quasi-experimental design was used with the treatment group and comparison group, and the pre-post treatment measurements. Two samples were used:

Sample 1: Constituted of a sample of 346 undergraduate students from the University of Concepción, representing three disciplinary areas: chemical-biological, physical-mathematical and social-humanities. Of these, 249 were assigned to the treatment group and 107 to the comparison group

TABLE I
DISTRIBUTION OF SAMPLE 1 BY SEX

		Frequency	Percentage
Valid data	Men	140	40,3
	Women	196	56,5
	Total	336	96,8
Missed data		11	3,2
Total		347	100,0

TABLE II
DISTRIBUTION OF SAMPLE 1 BY AREA OF KNOWLEDGE

	Frequency	Percentage
Physical-Mathematical	96	27.7
Chemical-Biological	135	38.9
Social Sciences and Humanities	116	33.4
Total	347	100.0

TABLE III
DISTRIBUTION OF SAMPLE 2 BY SEX

Sex	Frequency	Percentage
Men	21	43.75
Women	27	56.25
Total	48	100.0

Sample 2: 48 graduates of three areas of study from the University of Concepción: 16 graduates each from the fields of social-humanities, chemical-biological and physics-mathematical field. Of these, eight students from each field of study are part of the treatment group (received the educational model) and eight students from each area are part of the comparison group (did not receive the educational model).

TABLE IV
DISTRIBUTION OF SAMPLE 2 BY AREA OF KNOWLEDGE

Area	Freq.	Percentage
Physical-Mathematical	16	33.3
Chemical-Biological	16	33.3
Social Sciences and Humanities	16	33.4
Total	48	100.0

VI. INSTRUMENTS

1) Survey of self-perception of learning related to professional social responsibility (SLSR): Used to evaluate cognitive learning, affective learning and behavioral learning. It has a total of 12 items in which students score from 1 to 7, from lower (1) to higher learning (7). It has three scales with four items and casts the average for each one. It has a Cronbach's alpha of 0.80 for the full scale.

2) Questionnaire on self-attribution of socially responsible behavior (QSSRB): It is composed of 40 items that tribute 10 scales of higher education SR: academic responsibility; volunteer activities; social help; religious activities; social coexistence; civic-university responsibility; self-care; cultural development; ecology and environment; respect for shared spaces. The total group of items tributes to a general scale of self-attribution of frequencies of SR behaviors. It presented a Cronbach's reliability of 0.83.

3) Questionnaire of attitudes toward social responsibility: It consists of 30 items distributed in 10 scales; it determines the degree of agreement with the sentence presented as a device. The responses are represented on a Likert-type scale of 5 options, from 1 (totally disagree) to 3 (indifferent) to 5 (totally agree). A higher score represents a higher degree of agreement with an item. The results are grouped into a general scale of attitudes. A Cronbach's reliability of 0.81 was presented for the general scale.

4) Values questionnaire: Consists of 60 items, distributed in 10 scales with six items each. Results are interpreted in a General Scale of Values. Each item gives a value and small sentence in parenthesis. E.g. "As a guiding principle of my life; *Honesty* is…?". Responses for each item are represented on a Likert-type scale of 9 options: from -1 to 7 (-1, 0, 1, 2, 3, 4, 5, 6, 7). In the scale, -1 means that the given definition is "opposite to my values"; 0 means that the definition is "nothing important to me"; from 1 to 7 the scale represents the importance given to the values, where 1 means "least important" and 7 "extremely important". Scale asymmetry manifests the discrimination that people naturally make when thinking about the importance of a value; the higher the score, the higher degree of agreement with the item. The results are grouped into a general scale of attitudes and presented a Cronbach's reliability score of 0.96 for the general scale.

5) Employers' Survey on Observed Professional Behaviors (ESOPB): Consists of a total of 15 items distributed in five dimensions: knowledge of SR professional behaviors; evaluation and participation of professional work in a cooperative interdisciplinary team; practice of SR behavior; compliance with standards to facilitate the reconciliation of needs, and personal disposition to professional performance with SR. This instrument obtained a Cronbach's alpha reliability score of 0.78. The validity of all instruments was verified using the inter-judges method.

Data Analysis

- To test the first hypothesis, t-student test was used for the related samples based on a unilateral contrast.
- To test the second hypothesis, t-student test was used for the independent samples based on bilateral contrast.
- To test the third hypothesis, t-student test was used for the independent samples.
- To test the fourth hypothesis, the averages of the qualifications assigned by employers in the different dimensions of professional behaviour and an analysis of variance were performed using the statistical program, Minitab 15.

VII. RESULTS

- H1: In Relation to the Pre-Post-Program Comparison of the Treatment Group

At the level of SR, a significant increase was found in the score of the civic-university responsibility at $t(118)=-4.112$; $p<0.001$.

At the level of attitudes, a significant increase was found in the scores of the scales interdependence $t(75)=-1.920$; $p<0.05$, sustainable development $t(75)=-2.682$; $p<0.01$ and commitment to the truth $t(75)=-2.234$; $p<0.05$.

There were no significant changes in values.

- H2: In relation to the comparison between the group receiving treatment and the group that did not receive it.

Students in the treatment group scored higher than those in the comparison group on the scales of academic responsibility $t(166.8)=4.079$; $p<0.001$ and self-care $t(161.3)=2.119$; $p<0.05$ of QSSRB; and on the Common good and Equity scale $t(181.3)=1.722$; $p<0.05$ of the Attitudes Questionnaire.

They did not present higher scores than the comparison group in any of the scales of the Values Questionnaire.

- H3: In relation to differences between both groups in the self-perception of learning of professional SR.

The students in the treatment group present significant differences in all dimensions evaluated: cognitive learning $t(164.852)=6.3$; $p<0.001$, affective learning $t(165.853)=6.2$; $p<0.001$, y behavioral learning $t(164.855)=6.3$; $p<0.001$

- H4: In relation to differences in the perception of employers about SR professional behavior in the graduates who received the educational model and those who did; those who received the educational model qualify with an average of 6.71 from a maximum of 7.0 in the exercise of SR professional behavior and qualify significantly higher than the average score of 6.17 of those who did not receive the educational model; $p= 0.00000000000000000531$, $\alpha=0.01$.

Significant differences were also observed in all dimensions evaluated.

- C1: Knowledge of SR professional behavior p= 0.00000000000004882, α=0.01.
- C3: Practice of SR professional behaviors contributing to generating equity for development p=0.000000061038, α=0.01.
- C2: Evaluation of cooperative interdisciplinary professional work to contribute to solve the problems of society and participate with SR in the teams; p = 0.000000056478584, α=0.01.
- C5: Personal disposition; p = 0.0000000000772, α=0.01.
- C4: Compliance Standards; p = 0.0000003810030, α=0.01.

TABLE V
QUESTIONNAIRE FOR SELF-ATTRIBUTION OF SOCIALLY RESPONSIBLE BEHAVIOR: GROUP STATISTICS

	Condition	N	Mean	St. deviation	Typ. error of the mean
Posttest Behaviors–Academic Responsibility	Treatment	239	4.3281	0.45458	0.02940
	Comparison	107	4.0701	0.57929	0.05600
Posttest Behaviors–Volunteer activities	Treatment	239	2.1105	0.75941	0.04912
	Comparison	107	2.2508	0.85923	0.08306
Posttest Behaviors–Social help	Treatment	239	2.5788	0.72299	0.04677
	Comparison	107	2.6674	0.85280	0.08244
Posttest Behaviors–Religious activities	Treatment	239	2.2120	1.09247	0.07067
	Comparison	107	2.0654	1.15198	0.11137
Posttest Behaviors–Social coexistence	Treatment	239	4.2584	0.47595	0.03079
	Comparison	107	4.2064	0.52033	0.05030
Posttest Behaviors–Civic-university responsibility	Treatment	239	3.2577	0.68527	0.04433
	Comparison	107	3.4517	0.71246	0.06888
Posttest Behaviors–Self Care	Treatment	239	4.2775	0.50224	0.03249
	Comparison	107	4.1238	0.67072	0.06484
Posttest Behaviors–Cultural development	Treatment	239	3.3438	0.65408	0.04231
	Comparison	107	3.5405	0.75247	0.07274
Posttest Behaviors-Ecology and Environment	Treatment	239	3.2967	0.50882	0.03291
	Comparison	107	3.3357	0.59197	0.05723
Posttest Behaviors-Respect for shared spaces	Treatment	239	4.5715	0.45442	0.02939
	Comparison	107	4.4992	0.51018	0.04932
Posttest Behaviors-General Scale	Treatment	239	3.4246	0.35359	0.02287
	Comparison	107	3.4211	0.41462	0.04008

VIII. CONCLUSIONS

The educational model positively affects the learning of SR, which is perceived by students as a result of cognitive, affective and behavioral learning and is also perceived by employers in the professional behavior of graduates.

The effect of the model is significant in the self-attribution of SR behavior and attitudes towards SR and is reflected in the observed professional behavior.

Students receiving the educational model have a significantly more favorable attitude towards equity and common good than those who do not receive the educational model; they present a perception of greater learning in the three dimensions of SR (cognitive, affective and behavioral),

and as well, employers also perceive a greater level of exhibited SR behavior.

Since living a full life is closely linked to developing and making the best of oneself, while being able to contribute to the well-being and happiness of others, the educational model for training SR professionals would contribute directly to this. However, the educational model does not significantly affect the values of the students; thus, a future study will identify the variables mediating the effect of the model, such as the values with which they enter university, religious formation, and subjective well-being, among others.

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