

## Possibilities of Targeted Development of Empathy in Teachers' Undergraduate Training

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### Abstract

The aim of our research was to confirm or reject the assumption that the intervention programme “E” – Empathy Development Programme – had a positive effect on changes in the cognitive and emotional component of empathy in the experimental group of students, future teachers. IRI – Interpersonal Reactivity Index (Davis, 1996) was used as the measuring tool. Data analysis of results showed differences in terms of desirable significant changes at the level of all IRI variables between the experimental group participating in experiential intervention and the group not participating in any intervention programme during testing.

**Keywords:** *multidimensional model of empathy, emotional construct of empathy, cognitive construct of empathy, “Perspective Taking” factor, “Emotional Concern” factor, “Fantasy” factor, “Personal Distress” factor*

### Introduction

Empathy constitutes the basic component of all existing psychological phenomena (Mlčák, 2008). The importance of empathy is emphasized also by C. Serino (2007, p. 109) in her statement: “Empathy is one of the most peculiar and intriguing phenomena in social life, which can be observed in several different contexts and analyzed at different levels.”

C.R. Rogers (1975, p. 4) describes empathy as follows: “It means entering the private perceptual world of the other and becoming thoroughly at home in it. It involves being sensitive, moment to moment, to the changing felt meanings which flow in this other person...To be with another in this way means that for the time being you lay aside the views and values you hold for yourself in order to enter another’s world without prejudice... and this can only be done by a person who is secure enough in himself that he knows he will not get lost in what may turn out to be the strange or bizarre world of the other, and can comfortably return to his own world when he wishes.” Empathy is one of the P-C-E pillars whose effect on pupils’ creative abilities was experimentally tested by Ďuricová (2000).

The main source of problems in the conception of empathy in contemporary psychology can be seen in the fact that the term empathy is used to designate two separate and independent phenomena which are emotional (affective) empathy and cognitive empathy.

The cognitive conception of empathy accentuates the mechanism of tuning into the psychology of other persons. Empathy is understood as a perceptual ability, an ability of social insight, but also as a communication process.

We endorse the current knowledge supporting the multi-dimensional character of empathy with links to the knowledge of more psychological schools and approaches. Davis (1996), Čavojová, Verešová (2011) understand empathy as a system of several constructs – primarily the construct of emotional empathy and the construct of cognitive empathy.

The model of empathy by Baron-Cohen and Wheelwright (2004) depicts the overlap of the affective and cognitive components of empathy, with the affective component described as experiencing emotions arising by perception of emotions of other people and the cognitive component as understanding or anticipation of the content the other could think or act by. This definition is closely related to equally named dimensions of subjective well-being (Pašková, 2010).

Some authors are of the opinion that cognitive empathy is a prerequisite for the development of emotional empathy, others assume complicated interaction relationships between them (Hoffman, 1987).

In contemporary psychology, the multi-dimensional conception by M.H. Davis (1983) is the most elaborated. M.H. Davis is of the opinion that empathy may be operationalized and measured as a set of constructs, components, with a hierarchic arrangement. He constructed the IRI scale aimed at measuring 4 basic components: Perspective Taking, Empathic Concern, Fantasy and Personal Distress.

We believe that development of the theory of empathy as well as its study requires acceptance of the multi-dimensional understanding of empathy.

The aim of our research was to determine the efficiency of the intervention “E” – empathy development programme in teachers’ undergraduate training. We expected that the constructed intervention programme would primarily purposefully develop the affective and cognitive component of empathy, but also other social skills and competences necessary for the performance of the challenging teaching profession.

The “E” – empathy development programme in undergraduate training of future teachers was carried out once a week, 30 meetings, 90 hours in total, and focused mainly on the development of the following 5 components:

- Adequate self-assessment and assessment of others.
- Adequate identification of emotional stimuli.
- Taking other peoples’ perspective.
- Ability to respond empathically.
- Willingness to forgive oneself and others.

Research objectives were specified as follows:

1. Find out whether the intervention program of empathy development had an effect on increasing the level of the cognitive and affective components of empathy in students – future teachers.
2. Find out whether the intervention empathy development programme had an effect on decreasing personal distress in students – future teachers.
3. Compare the level of individual variables in the experimental and the control groups after carrying out the intervention programme “E” – empathy development programme.
4. Find out what the stability of changes, if any, in individual variables would be like after 5 months from the intervention programme “E” – empathy development programme.

## **Methods**

The methodology of the experimental-verification research is based on the so-called comparative strategy. We used the design with one experimental group – comparison in time (level of abilities or performance before and after the research) and group-to-group experimental design with two groups – comparison of the experimental and the control groups.

Increase in the level of abilities and performance is indicated by comparison of the level of abilities or performance at the time horizon before and after the

intervention programme, as well as statistic testing of differences, if any, for significance, using the pair t-test (sequential experiment).

The increase in the level of abilities and performance is indicated also by comparison of the level of abilities or performance in the experimental and the control groups after the intervention programme, as well as statistic testing of differences, if any, for significance with the use of the t-test for two independent samples (parallel experiment).

## **Participants**

Due to the complexity of technical provisions for the intervention programme, the research sample was limited to 41 respondents in the experimental group and 82 respondents in the control group. The experimental group included 7 male respondents and the control group 12 male respondents.

The experimental group and the control group consisted of students of the 2<sup>nd</sup> and 3<sup>rd</sup> year of study at the Faculty of Education and Faculty of Humanities of Mathias Bel University in Banská Bystrica, with study programmes in general education subjects teaching, while the students of the control group did not attend any intervention prosocial programme during our tested intervention programme.

## **Instruments**

In terms of our research aim formulation, the research tool Interpersonal Reactivity Index – IRI (Davis, M.H., 1996) was chosen. The scale consists of 28 items divided into 4 sub-scales of 7 items each, as follows:

1. Subscale of Empathic Concern (EC) – measuring the feelings of compassion, cordiality, sympathy and concern for unfortunate others.
2. Subscale of Perspective Taking (PT) – measuring the tendency to take points of view of others based on non-egocentric thinking; it measures the cognitive component of empathy.
3. Subscale of Personal Distress (PD) – measuring the tendency to self-focused feelings of apprehension, discomfort at witnessing others experiencing crisis situations.
4. Subscale of Fantasy (FS) – measuring the tendency to transpose oneself imaginatively into feelings and actions of fictitious characters in books, films and to perceive their situation.

All four subscales have sufficient internal and re-test reliability (internal reliability range is from 0.71 to 0.77; retest reliability ranges from 0.62 to 0.71).

## Results

Collected data were processed by means of the statistical programme SPSS. The following statistical methods were used: descriptive analysis of data, the Mann-Whitney U-test (Wilcoxon Test – non-parametric version of the pair t-test for comparison of two independent samples in repeated measurement).

### *A. Results of research findings for the components of Empathic Concern and Perspective Taking*

**Table 1.** Basic descriptive indicators of three measurements of the EC and PT levels in the experimental and the control groups

		EC1	EC2	EC3	PT1	PT2	PT3
Experimental group	AM	11.83	17.93	17.83	12.1	17.44	17.1
	N	41	41	41	41	41	41
	SD	2.036	1.555	1.58	1.868	1.184	1.261
	M	12	18	18	12	17	17
	Maximum	16	20	20	18	20	20
	Minimum	8	15	14	8	15	15
Control group	M	11.52	11.68	11.67	11.71	11.72	11.62
	N	82	82	82	82	82	82
	SD	1.476	1.404	1.352	1.511	1.443	1.376
	M	12	12	12	12	12	11
	Maximum	16	16	16	16	16	15
	Minimum	8	9	9	9	9	9

Legend: EC factor – Emotional Concern, PT factor – Perspective Taking

**Table 2.** Significance of differences in the EC and PT levels between the experimental and the control groups

Variable	Group	n	M	Mann-Whitney	
				U value	p
EC1	Experimental	41	12	1525.500	.393
	Control	82	12		

Variable	Group	n	M	Mann-Whitney	p
				U value	
EC2	Experimental	41	18	7500	.000
	Control	82	12		
EC3	Experimental	41	18	11.500	.000
	Control	82	12		
PT1	Experimental	41	12	1501	.317
	Control	82	12		
PT2	Experimental	41	17	6500	.000
	Control	82	12		
PT3	Experimental	41	17	7500	.000
	Control	82	11		

Legend: EC – Emotional Concern pretest, PT1 – Perspective Taking pretest, EC2 – Emotional Concern first posttest immediately after the programme, PT2 – Perspective Taking first posttest immediately after the programme, EC3 – Emotional Concern second posttest 5 months after the programme, PT3 – Perspective Taking second posttest 5 months after the programme.

Based on the Mann-Whitney test results, it can be stated that the difference between the experimental group and the control group, manifested by the change in the Emotional Concern (EC) subscale level and by the change in the Perspective Taking (PT) subscale level in the first posttest (after termination of the intervention programme) proved to be statistically significant at the significance level of  $p < 0.001$  and in the third measurement (5 months after termination of the intervention programme) at the significance level of  $p < 0.001$ . We made sure that the control group and the experimental group did not differ significantly after the first measurement (in the pretest) of the Emotional Concern subscale (before the intervention programme), since  $p = 0.393$ , i.e.,  $p > 0.05$ . Also, the control group and the experimental group did not differ significantly after the first measurement (in the pretest) of the Perspective Taking subscale, since  $p = 0.317$ , i.e.,  $p > 0.05$ , which we perceive as a positive indicator.

**Table 3.** Significance of differences in the variables EC and PT in the experimental group by Wilcoxon testing

	Group	M	AM	SD	Z	p
EC pre	1	12	11.83	2.036	-5.61	.000
EC post1	1	18	17.93	1.555		
EC pre	1	12	11.83	2.036	-5.618	.000
EC post2	1	18	17.83	1.58		

	Group	M	AM	SD	Z	p
EC post1	1	18	17.93	1.555		
EC post2	1	18	17.83	1.58	-0.832	.407
PT pre	1	12	12.1	1.868		
PT post1	1	17	17.44	1.184	-5.485	.000
PT pre	1	12	12.1	1.868		
PT post2	1	17	17.1	1.261	-5.52	.000
PT post1	1	17	17.44	1.184		
PT post2	1	17	17.1	1.261	-2.841	0.006

Legend: 1 – experimental group, n = 41, pretest, posttest after the programmes, post2 – posttest 5 months after the programme

Based on the Mann-Whitney test results it can be stated that the difference in the experimental group in the second measurement, i.e., in the first posttest (after termination of the intervention programme), manifested by the change in the Emotional Concern (EC) subscale level and the change in the Perspective Taking (PT) subscale level proved to be statistically significant at the significance level of  $p < 0.001$  and in the third measurement (5 months after termination of the intervention programme) at the significance level of  $p < 0.001$ .

**Table 4.** Significance of differences in the variables EC and PT in the control group in the pretest and posttests by Wilcoxon testing

	Group	M	AM	AD	Z	P
EC pre	2	12	11.52	1.476		
EC post1	2	12	11.68	1.404	-1.555	.109
EC pre	2	12	11.52	1.476		
EC post2	2	12	11.67	1.352	-1.61	.095
ECpost1	2	12	11.68	1.404		
ECpost2	2	12	11.67	1.352	-0.173	.951
PT pre	2	12	11.71	1.511		
PT post1	2	12	11.72	1.443	-0.133	.913
PT pre	2	12	11.71	1.511		
PT post2	2	11	11.62	1.376	-0.929	.382

	Group	M	AM	AD	Z	P
PT post1	2	12	11.72	1.443	-1.706	.134
PT post2	2	11	11.62	1.376		

Legend: 2 – control group, n = 82, EC – Emotional Concern, PT – Perspective Taking

There were no significant changes in the control group between the first measurement (pretest) and the second measurement (posttest 1) of Emotional Concern (EC),  $p = 0.109$ , i.e.,  $p > 0.05$ , as well as no significant changes between the second (posttest 1) and the third measurement (posttest 2), since  $p = 0.951$ , i.e.,  $p > 0.05$ , and no significant changes between the first (pretest) and the third measurement (posttest 2),  $p = 0.095$ , i.e.,  $p > 0.05$ .

No significant changes were recorded also for the Perspective Taking variable (PT) in the control group, between individual measurements;  $p = 0.913$ , i.e.,  $p > 0.05$  between the first and the second measurement; and  $p = 0.134$ , i.e.,  $p > 0.05$  between the second and the third measurements; and  $p = 0.382$  between the first and the third measurements.

### ***B. Results of research in the components of the "Personal Distress" (PD) subscale and the "Fantasy" (FS) subscale***

**Table 5.** Statistic description of the FS and PD levels in the pretest and posttests in the experimental group and the control group

Group		FS1	FS2	FS3	PD1	PD2	PD3
Experimental	M	12.49	15.73	15.41	14.05	9.68	9.93
	N	41	41	41	41	41	41
	SD	1.791	1.582	1.565	2.449	1.877	2.005
	MD	12	16	15	14	9	9
	Maximum	17	18	18	19	17	18
	Minimum	8	12	12	8	8	8
Control	M	11.84	11.79	11.71	12.99	12.6	12.67
	n	82	82	82	82	82	82
	SD	1.895	1.81	1.842	2.831	2.748	2.699
	MD	12	12	12	12	12	12

Legend: FS – Fantasy factor, PD – Personal Distress factor



**Table 6.** Significance of differences in the level of the FS and PD subscale variables between the experimental and control groups

Variable	Group	n	M	Mann-Whitney	
				U value	p
FS1	Experimental	41	12	1347.500	.067
	Control	82	12		
FS2	Experimental	41	16	208	.000
	Control	82	12		
FS3	Experimental	41	15	261.500	.000
	Control	82	12		
PD1	Experimental	41	14	1248.000	.019
	Control	82	12		
PD2	Experimental	41	9	545.000	.000
	Control	82	12		
PD3	Experimental	41	9	589.500	.000
	Control	82	12		

Based on the Mann-Whitney test results, it can be stated that the difference manifested by the change in the Fantasy (FS) subscale level in the first posttest after termination of the intervention programme proved to be statistically significant at the significance level of  $p < 0.001$ , and in the third measurement, i.e., in the second posttest 5 months after termination of the intervention programme at the significance level of  $p < 0.001$ .

In the pretest before the intervention programme, the control and experimental groups did not differ significantly in the Fantasy (FS) subscale:  $p = 0.067$ , i.e.,  $p > 0.05$ . There was a statistically significant difference between the control and the experimental groups in the Personal Distress subscale before the intervention programme, i.e., in the pretest, since  $p = 0.019$ , i.e.,  $p > 0.05$ , which we perceive as a positive indicator. This can be explained also by the fact that Personal Distress is a subscale that is easily influenced by the respondents' momentary situation, by momentary distress; persons experiencing difficult stress situations could be precisely in the experimental group, experiencing "distress" at that very moment, however from the point of view of our testing of the experiment we can say that it was the experimental group where a higher value of the Personal Distress (PD) subscale was recorded, which was a great challenge for us to teach the students to adequately process and eliminate their negative emotions connected with distress.

**Table 7.** Significance of differences in the FS and PD subscale variables in the experimental group in the pretest and posttests by Wilcoxon testing

	Group	M	AM	AD	Z	p
FS pre	1	12	12.49	1.791		
FS post1	1	16	15.73	1.582	-5.267	.000
FS pre	1	12	12.49	1.791		
FS post2	1	15	15.41	1.565	-5.285	.000
FSpost1	1	16	15.73	1.582		
FS post2	1	15	15.41	1.565	-3.357	.001
PD pre	1	14	14.05	2.449		
PD post1	1	9	9.68	1.877	-5.257	.000
PD pre	1	14	14.05	2.449		
PD post2	1	9	9.93	2.005	-5.19	.000
PD post1	1	9	9.68	1.877		
PD post2	1	9	9.93	2.005	-2.637	.010

Legend: 1 – experimental group, n = 41

The results of data analysis by Wilcoxon testing, as seen in Table 7, show that significant differences were found in the experimental group between the pretest and the first posttest (before and after the intervention programme), i.e.,  $p < 0.001$ , as well as between the pretest and the second posttest (before and 5 months after the intervention programme), i.e.,  $p < 0.001$  in both studied variables, the Fantasy (FS) and Personal Distress subscales. Significant changes were found in the Fantasy subscale between individual posttests, since  $p = 0.001$ , i.e.,  $p < 0.05$ ; it was a change in time, which, however, we perceive and interpret as natural. Some differences were found also in the Personal Distress (PD) subscale between individual posttests, since  $p = 0.010$ , i.e.,  $p < 0.05$ .

No significant changes were found in the control group between individual measurements of the Fantasy (FS) subscale, i.e., no significant differences manifested either between the first measurement (pretest) and the second measurement (posttest 1),  $p = 0.605$ , i.e.,  $p < 0.05$ , nor were there any significant changes between the second (posttest 1) and the third measurement (posttest 2), since  $p = 0.066$ , i.e.,  $p < 0.05$ . Also, there were no significant changes between the pretest and the second measurement (posttest 2),  $p = 0.197$ , i.e.,  $p < 0.05$ .

The Personal Distress variable recorded no significant changes between individual posttests,  $p = 0.326$ , i.e.,  $p < 0.05$ , however, significant changes were found between the pretest and the first measurement, as well as between the pretest and the second measurement, since  $p = 0.000$ , i.e.,  $p < 0.001$ . We explain it by the fact that the Personal Distress factor is a specific variable and it is influenced by a whole range of extrinsic and intrinsic factors, in our view its fluctuation in time is acceptable (momentary situation, persistent traumatic experiences, health condition, momentary psychological condition, etc.).

We found statistically significant differences in the individual measurements of the Fantasy (FS) as well as Personal Distress (PD) subscale levels in the experimental group. The significant changes showed stability in time even 5 months after the intervention programme.

## **Discussion**

Our research task was to test the effectiveness of our intervention programme “E” – empathy development programme, in an experimental group of students – future teachers.

Although some studies in the field of social work or nursing state either zero and some even negative effect of training programmes on the level of empathy (e.g., LaMonica, Wolf et al., 1987, Vinton and Harrington, 1994), or they speak about a minimum positive effect of training programmes on the level of empathy (Corcoran, 1982, Herbek and Yammarino, 1990), we can state, based on the data analysis results of the experimental group participating in experiential intervention and the group not participating in any intervention programme during testing, desirable significant changes in the level of all four variables, in terms of an increase in the level of emotional empathy (EC), in terms of an increase in the cognitive component of empathy (PT), as well as in terms of an increase in the “Fantasy” (FS) factor and in terms of the reduction of the Personal Distress (PD) factor in the experimental group.

S.L. Hatcher et al. (Hatcher, Nadeau, Wahl, 1994) administered M.H. Davis’s Interpersonal Reactivity Index questionnaire to 104 high school and college students before taking part in a Rogerian course of peer-counselling skills and after its termination. During the training in 7 smaller groups, the students were solving identical model situations to develop their empathic skills.

According M.H. Davis (1983), the Emotional Concern (EC) subscale, Perspective Taking (PT) subscale and Fantasy (FS) subscale increase with age, whereas

the Personal Distress (PD) subscale decreases with age under the influence of personal maturity. The students' score in the Emotional Concern (EC) subscale, Perspective Taking (PT) subscale as well as the so-called average empathic score increased statistically significantly after the completion of the Rogerian training. Therefore, the authors of the study could verify the hypothesis that students' empathy can improve by training. The Personal Distress score did not change after the training. It was also proved that college students increased their empathy through the empathy training more significantly than high school students. P.I. Erera compared a cognition – oriented empathy training programme and an emotion-oriented empathy training programme for helping professionals, carried out with 51 social work students working with clients during their practical training. The empathy-oriented programme conducted by a supervisor with real clients was focused mainly on a thorough and accurate cognitive understanding of their problems. The students constructed cognitive hypotheses based on clients' statements and verified them subsequently with the help of the supervisor. On the other hand, the emotion-oriented training programme emphasized and put emotional experiences in the first place in student-client conversations, while the supervisor's feedback was more individualized. The author did not find any statistically significant differences in emotional empathy outcomes before the beginning and after termination of the empathic training forms, however, she was of the opinion that the qualitative analysis of the students' and the supervisor's statements suggested that their empathy had increased.

Although the intervention programme we had developed and verified was effective in the studied variables, we are aware that conclusions of any research should be objectively assessed in the context of various research limitations.

The following is specification of limitations in our research:

1. Due to the complexity of technical provisions for the intervention programme, the limited number of students in the training group, the research sample was limited to 41 respondents in the experimental group.
2. The so-called self-report approach, based on subjectivity, misrepresented self-reporting items in questionnaires measuring tendencies to empathic behaviour.

The methodological limitations of the research can be overcome only by follow-up research correcting and expanding the obtained research results.

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