

# The Impact of Perspective Taking Training in Student Teachers on Unintended Empathy Components

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## Abstract

Empathy training focuses mainly on improving perspective taking (PT) skills, but rarely considers possible changes in other, affective empathy components. In this study, we aimed to examine for unintended changes in the other empathy components emotional concern, personal distress, and fantasy, some of which were not specifically intended. We used a trait (Saarbrücken Personality Questionnaire for Measuring Empathy) and a state (Jefferson Scale for Empathy - Teacher Version) questionnaire respectively. On the trait measures, only the PT score improved, as it was intended by the training. No significant change in the affective factors occurred. Thus, the training showed no undesirable side effects. Looking at the Jefferson Scale factors related to pedagogical situations, significant changes occurred in the areas of perspective taking, emotional understanding of students, pedagogy more important than empathy, and student-centeredness. Since these are only pedagogically relevant changes in attitudes, this is consistent with the goal of the empathy training. Unwanted side effects were not observed here either.

**Keywords:** Empathy, perspective taking, empathy training, empathic concern, personal distress

## 1. Introduction

In current research, empathy is seen as a multidimensional construct consisting of affective and cognitive factors. This assumption is primarily based on the social psychological studies by Davis (1980, 1983b; 1999), who identifies four factors of empathy that correlate weakly to moderately strongly with each other. Emotional concern (EC) and personal distress (PD) are

described as affective factors, whereas perspective taking (PT) and the fantasy scale (FS) represent the cognitive aspects of the construct. EC “refers to 'other-oriented' feelings of sympathy and concern for unfortunate others, and PD refers to 'self-oriented' feelings of personal anxiety and unease in tense interpersonal settings” (Ingoglia et al., 2016, p. 461); PT describes the ability to imagine how oneself or the person being observed might feel in the respective situation.

From this formulation, one can already recognize the small differences that make the term PT more complicated on closer inspection: on the one hand, the question of whether one imagines how one would feel (self-focused) in the respective situation or how the other person (other-focused) would feel (Batson et al., 1997). Furthermore, the accuracy of this assessment is not usually recorded, but only the attempt to change perspective. This can be illustrated using two items from the Interpersonal Reactivity Index (IRI) questionnaire developed by Davis in this context or the German version, the Saarbrücken Personality Questionnaire for Measuring Empathy (SPF, Paulus (2009a)): “Before I criticize someone, I try to *imagine* what the situation looks like from their point of view” or “I *try to understand* both sides of an argument before I make a decision.” The PD scale, on the other hand, is intended to measure self-focused feelings such as anxiety or discomfort in close interpersonal relationships or emotionally charged situations. The last factor, FS, is somewhat unclear in terms of its content, as the wording of the associated items describes both affective and cognitive content: “I can very well *imagine* the feelings of a person in a novel” (cognitive) or “After watching a movie, I *feel* as if I were one of the characters in that movie” (affective). According to Davis (1980), this factor is regarded as cognitive, but later factor analyses are no longer consistently clear on this (Cliffordson, 2002; Koller & Lamm, 2015). As FS is also regarded as a measure of a person's sensitivity (Davis, 1983b; Ingoglia et al., 2016), it is also possible to speak of an increased affective component. This is also confirmed by the comparable correlations of the FS with both affective and cognitive factors of the IRI (Beven et al., 2004;  $r(\text{EC}) = .22$ ,  $r(\text{PT}) = .21$ ; Lauterbach & Hosser, 2007;  $r(\text{EC}) = .43$ ,  $r(\text{PT}) = .45$ ; Paulus, 2012;  $r(\text{EC}) = .46$ ,  $r(\text{PT}) = .33$ ).

In most cases, empathy trainings are aimed to improve the ability to adopt perspectives. Many perspective taking trainings succeed in doing this, as various meta-analyses show (Butters, 2010 - Hedge's  $g = .91$ ; Paulus & Meinken, 2022a - Hedge's  $g = .58$ ; Teding van Berkhout & Malouff, 2016 - Hedge's  $g = .63$ ). PT is a predominantly cognitive ability and is therefore also subject to the developmental psychological phases of cognitive development (Boyer, 2010; McDonald & Messinger, 2011; Ziaei et al., 2021). In contrast, for example, affective empathy for the emotions of an observed other person is much more difficult to change, as the heritability coefficient for this trait is significantly higher at around 72% (Davis et al., 1994a; Melchers et al., 2016) than for PT (approx. 27%).

Empathy training is aimed at improving the ability to adopt perspectives, as these have a significantly lower heritability than affective components of empathy and are increasingly linked to changes in general cognitive development (Davidov et al., 2013; Knafo et al., 2008; McDonald & Messinger, 2011; Zahn-Waxler et al., 1992). However, empathy training rarely considers possible changes in other components of the empathy construct. The assumption is

not unlikely, as in contrast to the independence of the 4 factors originally assumed by Davis (1980), correlations between the factors have been found time and again (see also Table 2) (De Corte et al, 2007;  $-.09 < r < .37$ ; Gilet et al, 2013;  $.48 < r < -.42$ ; Ingoglia et al, 2016;  $.29 < r < .51$ ). While an improvement in EC is a desirable change, an unintended change in other factors would not always be trivial, as, for example, a possible increase in PD may have an influence on the development of burnout (Admiraal & Roberg, 2023; Geng et al, 2023; Mérida-López & Extremera, 2017; Mohr et al, 2023).

Empathic people are more successful in social interaction with others (Baron-Cohen & Wheelwright, 2004; Davis, 1983a; Mehrabian & Epstein, 1972). A teacher's capacity for empathy is therefore also one of the strongest predictors of positive academic, affective and behavioral student outcomes (Cornelius-White, 2007). It is helpful in many phases of teaching such as classroom management (Emmer & Stough, 2001), in recognizing emotions such as anxiety, anger or even joy of learners in various learning activities (Weisz et al., 2021), but also in dealing more effectively with disruptions (Stojiljković et al., 2012) or bullying (Bilz et al., 2017). Teachers who rated their own ability to recognize emotions higher rated their subjective teaching success more positively (Wu et al., 2019) and were also seen as “more qualified” by their students (Ghanizadeh & Moafian, 2009; Khodadady, 2012). Empathic behavior is therefore seen as an important aspect of pedagogical professionalism (Auernheimer, 2016).

In this study, we now want to present the implicit, partly not specifically intended, changes in the three empathy components EC, PD and FS following empathy training in student teachers.

## **2. Method**

### *2.1 Sample*

The sample consisted of 77 student teachers (28 male and 49 female) aged between 19 and 43 years ( $MW = 23.30$  yrs,  $p = 3.65$ ). The training took place as a regular seminar of the module “Personality Development and Education”, which is intended for students from the 4th semester onwards. The students were enrolled accidentally in the seminar after registering via an automatic allocation system at the university.

### *2.2 The empathy training*

The training consisted of 7 sessions and an additional “homework assignment” at the end of each session, which was discussed the following week. When developing the training content, some existing exercises were used as a basis and adapted (Cairns et al., 2021; Shaffer et al., 2019), while large parts of the content were newly developed (Paulus & Meinken, 2022). The training focused on various exercises to improve PT. Some of these were carried out as group work with prior theoretical explanations or as so-called homework, in which what was practiced in the training was to be further observed or tested in the private environment. Table 1 below shows the content of the training.

Table 1. Structure and content of the empathy training

Unit 1	Theory	Theoretical overview of the concept of empathy
	Homework	Putting yourself in the shoes of a protagonist from a movie or series with key questions
Unit 2	Discussion of the homework assignment	Working on case studies from everyday student life in groups
	Case study	
	Homework	Observation of behavior in everyday life that resembles case studies
Unit 3	Discussion of the homework assignment	In group work: situations in which you felt (not) understood
	Own experiences with empathy	
Unit 4	Exercise: 500 years (Shaffer et al., 2019)	Taking on roles and explanation in partner exercise
	Narrative writing	
	Homework	Observe fundamental attribution errors in yourself in everyday life
Unit 5	Discussion of the homework assignment	Brainstorming about the importance of empathy for the teaching profession and possible disadvantages.
	Importance of empathy for the teaching profession and introduction to “active listening”.	
	Homework	Practice active listening with friends
Unit 6	Role play	Various situations from the school context are acted out using the previously acquired knowledge
Unit 7	Sustainability	Write a letter to yourself
Units 8 to 10	Newsletter	Sent 3 times to participants once a week by email

The effectiveness of the training has already been demonstrated in two studies involving a control group (Cohen's  $d$  between 1.28 and 2.66) (Paulus & Meinken, 2022b; Paulus, 2023).

The data described below were collected before the beginning of the training (t1) and at the end of training (t2) after 11 weeks.

### 2.3 Instruments

Two questionnaires were used to measure empathy. To measure dispositional or trait empathy (Konrath et al., 2015), we used the German version of the Interpersonal Reactivity Index (IRI), the Saarbrücken Personality Questionnaire for the Assessment of Empathy (SPF) (Paulus, 2009). The questionnaire measures the four constructs EC, PT, PD and FS (as described above) and is based on the theory of Davis (1980, 1983b). The German version has good internal quality criteria (all Cronbach's alpha  $> .75$ ) and high validity (Koller & Lamm, 2015; Paulus, 2009, 2012, 2016).

The more state-oriented measurement with reference to pedagogical situations was carried out using the version of the Jefferson Scale for Empathy specially adapted for the pedagogical context, the JSE-T (Paulus & Klopp, 2023). This version is based on the original version of the Jefferson Scale for Empathy (Hojat et al., 2018; Hojat et al., 2002; Hojat et al., 2001), which has already been translated or adapted for several specific applications (Preusche & Wagner-Menghin, 2013; Seitz et al., 2017). For our studies, we transferred the target group of the questionnaire from medical professionals to teachers and educational contexts. We used the items from (Preusche & Wagner-Menghin, 2013) as a starting point. The transfer of the wording is shown in the following example item:

- **JSE:** “Patients feel better when their doctors understand their feelings.”
- **JSE-T:** “Students feel better when their teachers understand their feelings”.

However, this was not possible for some items because they were too far removed from the educational context (example: „I do not enjoy reading non-medical literature and the arts”), so that ultimately 13 of 20 items were retained.

The following factors are recorded:

- **Perspective taking (JS\_F1)** (Example: “Teachers should try to understand what is going on in their students' minds by paying attention to their non-verbal signals and body language”)
- **Emotional understanding of students (JS\_F2)** (Example: “Students feel better when their teacher understands their feelings.”)
- **Perspective-taking by pupils problematic (JS\_F3)** (Example: “It is difficult for a teacher to see things from the pupil's perspective.”)
- **Pedagogy is more important than empathy (JS\_F4)** (Example: “Only pedagogical measures can solve students' school problems; teachers' emotional ties to their students therefore have no significant influence on the solution of school problems”).

- **Student-centeredness (JS\_F5)** (Example: “It is important to pay attention to a student's feelings when talking to them.”)

All factors show good internal consistency (all Cronbach's alpha > .60) (Paulus & Klopp, 2023).

The two questionnaires are based on different empathy concepts and have only a small theoretical overlap, making them well suited for a multi-method approach (Costa et al., 2017; Hojat & Gonnella, 2017).

### 3. Results

The correlations of the SPF factors are shown in Table 2 below. They thus correspond to the average correlations described in the literature (Fernández et al., 2011; Gilet et al., 2013; Ingoglia et al., 2016). The same applies to the correlations of the JSE-T shown in Table 3 (Hojat et al., 2018; Hojat et al., 2002; Hojat et al., 2001; Preusche & Wagner-Menghin, 2013).

Table 2. Correlations of the SPF factors within the sample at time 1 (EC: Emotional Concern; PT: Perspective Taking; FS: Fantasy Scale; PD: Personal Distress)

	EC.1	PT.1	FS.1	PD.1
EC.1	1	.515**	.614**	.257*
PT.1	.515**	1	.398**	-.219
FS.1	.614**	.398**	1	.153
PD.1	.257*	-.219	.153	1

\*\*: $p < .01$ ; \*: $p < .05$ .

Table 3. Correlations of the JSE-T factors within the sample at time 1 (F1: Perspective taking; F2: Emotional understanding of students; F3: Perspective taking of students problematic; F4: Pedagogy is more important than empathy; F5: Student-centeredness)

	F1.1	F2.1	F3.1	F4.1	F5.1
F1.1	1	.493**	.078	-.396**	.345**
F2.1	.493**	1	.050	-.340**	.418**
F3.1	.078	.050	1	-.061	.088
F4.1	-.396**	-.340**	-.061	1	-.794**
F5.1	.345**	.418**	.088	-.794**	1

\*\*: $p < .01$ .

Based on the existing correlations, it is reasonable to assume that EC could also improve alongside PT.

Table 4 shows the respective mean values of the SPF and JSE-T factors at the two measurement times.

Table 4. Mean values and standard deviations of the SPF and JSE-T factors at time 1 (x.1) and time two (x.2) with the parameters of the significant changes

<b>Factors and measurement time</b>	<b>Means</b>	<b>s</b>	<b>t (df = 76)</b>	<b>Cohen's d</b>
<b>SPF</b>				
EC.1	16.14	2.37		
EC.2	16.40	2.47	-1.30	---
PT.1	15.92	2.43		
PT.2	17.00	2.20	-5.81***	-0.66
FS.1	15.53	3.02		
FS.2	15.94	2.94	-2.11	---
PD.1	11.06	2.65		
PD.2	11.05	3.40	0.06	---
<b>JSE-T</b>				
F1.1	12.61	1.61		
F1.2	13.48	1.23	-4.93***	-0.56
F2.1	17.53	1.75		
F2.2	18.52	1.47	-5.68***	-0.64
F3.1	6.10	1.16		
F3.2	5.97	1.37	0.77	---
F4.1	4.60	2.90		
F4.2	2.88	1.35	5.25***	0.60
F5.1	7.91	1.75		
F5.2	9.27	0.98	-6.47***	-0.74

\*\*\*:  $p < .001$ .



In the trait-oriented measurements of the SPF, only the PT value improved, as was intended by the training. There was no significant change (after 11 weeks) in the other affective and cognitive factors. The training therefore showed no (un)desired side effects. Looking at the JSE-T factors related to pedagogical situations, there were clear changes in the areas of perspective taking (F1), emotional understanding of pupils (F2), pedagogy more important than empathy (F4) and pupil-centeredness (F5). As these are only pedagogically relevant changes in attitudes, this corresponds to the aim of the empathy training. Undesired side effects were not observed here either.

#### 4. Discussion

In this study, we wanted to investigate to what extent other factors of the multidimensional construct empathy were also influenced by the empathy training, which was specifically aimed at improving the ability to adopt perspectives. In our study, we looked at all components of empathy under trait and state orientation and were unable to observe any changes in the affective factors. This shows that this training actually only changed the cognitive ability of perspective taking and thus also corresponds to results from a study with a control group (Paulus & Meinken, 2022b), so that we can actually attribute the effects to the training. All other factors remained stable. This corresponds to the few studies in which affective factors are mentioned at all: For example, Mehta et al. (2021) found no improvement directly following communication training to improve empathic behavior, similar findings were described by Sands et al. (2008), Shapiro et al. (2004) or Evans et al. (1993). When improvements in affective skills were observed, either more situation-specific measurement instruments were used (Okonofua et al., 2016; Winter et al., 2020) or the samples were so small that generalization was not possible (Sands et al., 2008).

Our study revealed more significant changes in situation-specific attitudes in educational contexts. In particular, student-centeredness, understanding of learners' feelings and the importance of empathic action in the school context were greatly improved. Our results thus correspond to those of other studies from the medical field that used the Jefferson Scale as a measure of empathy (Lor et al., 2015; Nasr Esfahani et al., 2014; Schweller et al., 2017). Comparable results with a pedagogical context are not yet available, as the scale has only recently been developed, which leads to the first limitation: The validation of the JSE-T scale has so far only taken place via factor analyses; an external validation on external criteria outside the SPF has not yet been completed. However, a CFA carried out again on a larger sample ( $n = 299$ ) has so far confirmed the results. However, as the changes in the cognitive area of empathy are consistent on both measurement instruments (the SPF is externally validated), we see no limitations to the scope of the results.

Another limitation of our study could be that the period in which our training lasted or in which we measured changes could be too short to detect changes in affective personality factors (Stieger et al., 2021). It is possible that better effects in affective empathy could still be seen a few weeks later if the subjects find that the increase in PT ability had a positive impact on their everyday life.

Another limitation of such training is often the sample size. With 77 participants, we are in



the lower middle range of the usual sizes. In addition, our sample consists of about 2/3 women, whose affective empathy is generally somewhat higher (Baron-Cohen & Wheelwright, 2004; De Corte et al., 2007; Fernández et al., 2011; Gilet et al., 2013; Ingoglia et al., 2016; Lawrence et al., 2004; Löffler & Greitemeyer, 2021) and therefore an improvement would be more difficult to achieve.

A final possible point of criticism is the method of data collection using questionnaires. Although we used two different questionnaires, they are still self-assessments, which are of course subject to certain confounding influences. On the one hand, this could be so-called social desirability (Paulhus, 1991; Winkler et al., 2006), although one would have to assume an overestimation rather than an underestimation of affective ability; on the other hand, the subjects may not have been so aware that they were more empathetic than before because their attention was focused more on the cognitive aspects than on affective aspects. These questions can be examined in more detail in a planned follow-up study.

## **5. Conclusion**

The most important conclusion for us is that it is possible to promote perspective taking as part of the training of prospective teachers. However, since the topic of empathy tends to be treated as a marginal topic in the usual university curricula (Kilian & Marx, 2020), it would be desirable to implement it permanently in the catalogue of training topics. From the students' perspective, too, there was only positive feedback on the topic and also on the personally perceived changes, which were seen as an enrichment for studies and everyday life. However, the duration of the training would have to be adjusted to allow it to be transferred to other phases of teacher training or further training - studies on this are currently in preparation. As the unintended, affective empathy factors did not deteriorate, there is still a chance that it may still be possible to have an additional positive influence on them if the content of the training is changed slightly.

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## **Data Availability Statement**

The data that support the findings of this study are available on request.

## **Competing Interests Statement**

The author declares no conflicts of interest.

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