Research Article

WHO BENEFITS MORE FROM EMPATHY TRAINING IN TEACHER EDUCATION? MEN OR WOMEN?

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ARTICLE INFO	ABSTRACT
	Empathy training usually aims to improve perspective-taking skills, as this component of empathy is subject to greater cognitive developmental and environmental influences through maturation or learning processes. The empathy training for student teachers on which this study is based also successfully targets this component. The question arose to what extent the changes in perspective-taking could be gender-specific, i.e., whether men or women achieved different improvement outcomes. To this end, we used two different measures of cognitive perspective-taking that looked at state- and trait-oriented changes, respectively. On both measures, we were able to achieve significant gains in perspective taking, consistent with the pilot study, which were also consistently detectable for several weeks after the end of the study. Both male and female subjects benefited equally from our training.

INTRODUCTION

Students experience many different emotions while learning: joy, anger, boredom, frustration or even shame. The emotional world of students also influences their behavior in class and their interactions with each other, and teachers are confronted with these emotions or behavior on a daily basis. A teacher's behavior appropriate to the situation and person also directly influences variables relevant to learning such as classroom management, classroom climate, or pedagogical support (Aldrup *et al.*, 2022; Reusser, 2018; Stojiljković *et al.*, 2012). The basis for this behavior is the ability to recognize, empathize, and respond appropriately to emotions in others, i.e., empathy (Saxena *et al.*, 2017). Empathic teachers are better able to solve problems within the class (Wink *et al.*, 2021), better able to take on the perspective of their students and therefore better able to impart knowledge (Reusser, 2018), better able to give personal feedback (Kilian, 2018), or better able to arouse students' readiness to learn (Meyers *et al.*, 2019). However, empathic teachers also have advantages when it comes to problems within the classroom; for example, they recognize bullying more quickly (Mishna *et al.*, 2012), are therefore more likely to intervene (Craig *et al.*, 2000), and use more effective resolution strategies (Bilz *et al.*, 2017). In Cornelius-White's (2007) meta-analysis, teacher empathy was found to be one of the strongest predictors of student learning success. For this very reason, it is surprising that empathy plays only a very minor role in teacher education (Kilian & Marx, 2020).

Empathy is currently viewed as a multidimensional construct consisting of affective and cognitive components (Britton & Fuendeling, 2005; Cliffordson, 2002; Cuff *et al.*, 2016; Davis, 1980; Dziobek *et al.*, 2008). Affective components include the ability to empathize or sympathize with observed emotions (emotional concern) or to respond to them with discomfort (personal distress). The ability to change perspectives (perspective taking) represents the main cognitive component. These factors are not independent of each other and correlate weakly to moderately strongly with each other (Beven *et al.*, 2004; Ingoglia *et al.*, 2016; Paulus, 2012). For both affective and cognitive factors of empathy, a distinction can be made between other- and self-orientation: thus, emotional concern (EC) refers more to the emotional situation of others, whereas personal distress (PD) refers more to one's own emotional situation. A similar distinction can be made in perspective taking (PT), as this can occur from two points of view according to the question "how would I feel in the other person's place?" versus "how does the other person feel?" (Batson *et al.*, 1997; Batson *et al.*, 1987).

The affective aspects in particular have a very high heritability (Melchers *et al.*, 2016) and are therefore very difficult to change through training approaches. This is more successful in the case of perspective taking. Especially in the training of prospective physicians, there are very many training programs with more or less success. A large overview of approaches and effects can be found in Batt-Rawden *et al.* (2013), Fernandez and Zahavi (2021) or in the meta-analyses by Teding van

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Berkhout and Malouff (2016), Fragkos and Crampton (2020) and Paulus and Meinken (2022a).

In the field of teacher education, on the other hand, there are few well-theorized and evaluated training approaches (Aldrup *et al.*, 2022; Aparicio-Flores *et al.*, 2020; Little & Maunder, 2020; Paulus & Meinken, 2022b; Shteinmets, 1983). Although the actual research object of perspective-taking is identical, the populations of the samples are nevertheless very different, as students in the teaching program show a higher variance in the subjects studied or even in the baccalaureate grade, which is why the results of the studies from the field of medicine cannot be directly applied to student teachers. What all training has in common, however, is that it can be successful and significantly improve perspective-taking.

It is undisputed in the literature that there are gender differences in the affective and cognitive factors of empathy. For example, women are considered to be generally more empathic across all domains (De Corte *et al.*, 2007; Ingoglia *et al.*, 2016; Löffler & Greitemeyer, 2021; Lonigro *et al.*, 2013; Saxena *et al.*, 2017). Gilet *et al.* (2013) found significantly higher values for women in the scales FS and EC with, however, very small effect sizes ($\eta^2 = .01$ and $\eta^2 = .06$). Same results were found by Ingoglia *et al.* (2016) but with higher effect sizes (mean $\eta^2 = .15$). De Corte *et al.* (2007) could prove gender differences on all four scales with an average effect strength of $\eta^2 = .23$. In the study from Fernández *et al.* (2011) women attained higher scores than men in FS, EC, and PD (all $p < .001$). However, there are also studies showing that men performed comparably to women in perspective taking (Gilet *et al.*, 2013; Olderbak *et al.*, 2015; Surtees *et al.*, 2012; Trilla *et al.*, 2020).

In our study, we therefore asked the question, can men benefit more from empathy training than women?

Method

Sample

A total of 43 student teachers participated in our training, of which 20 were male and 23 were female. The average age of the students was 23.7 years (range 20 yrs - 43 yrs).

Empathy training

The empathy training primarily aimed at improving perspective-taking skills and consisted of 7 modules, each of which was conducted for 1.5 h per week. The following table 1 shows the structure and content of the training units (for further details on the training see Paulus & Meinken, 2022b):

Instruments

We use two measurement procedures to assess empathy. First, the Saarbrücken Personality Questionnaire (SPF) (Paulus, 2009), which is a German adaptation of the Interpersonal Reactivity Index (IRI) (Davis, 1983) and therefore measures rather trait empathy. The SPF measures empathy in four interrelated subtests:

- **Perspective Taking (PT)** (sample item "I try to look at everybody's side of a disagreement before I make a decision")
- **Fantasy Scale (FS)** (sample item "I really get involved with the feelings of the characters in a novel")
- **Empathic Concern (EC)** (sample item "I often have tender, concerned feelings for people less fortunate than me")
- **Personal Distress (PD)** (sample item "In emergency situations, I feel apprehensive and ill-at-ease")

PT measures the ability to spontaneously see something from the psychological perspective of another person; the fantasy scale (FS) measures the tendency of the respondent to put himself in the place of characters in novels or films. The remaining two subscales represent operationalizations of an observer's typical emotional responses: The EC scale is used to measure other-oriented feelings such as pity or concern for persons in distress, whereas the PD scale is intended to measure intrinsically focused feelings such as restlessness or discomfort in emotionally charged situations. All factors have good internal consistency (all Cronbach's alpha > .75).

In addition to focusing on empathy in pedagogical situation-specific contexts, we used the Jefferson Scale of Empathy for Teachers (JSE-T) (Paulus & Klopp, n.d.; Paulus & Meinken, 2022b), which is more focused on state empathy. The questionnaire measures the following 5 factors:

- **Perspective Taking (JS_F1)** (sample item "Teachers should try to understand what is going on in their students' minds by paying attention to their nonverbal cues and body language")
- **Emotional understanding of students (JS_F2)** (sample item "Students feel better when their teacher understands their feelings")
- **Perspective taking with students problematic (JS_F3)** (sample item "It's hard for a teacher to look at things from the student's perspective")

Table 1 Structure and contents of the training

Unit 1	Theory	Theoretical overview of the concept of empathy in general
	Homework	Putting yourself in the shoes of a protagonist from a film or series with guiding questions
Unit 2	Discussing the homework - case study	Work on case studies from everyday student life in group work
	Homework	Observation of behavior in everyday life that resembles case studies
Unit 3	Discussing the homework - own experience	In group work: situations in which one has (not) felt understood
Unit 4	Exercise 500 years (Shaffer et al., 2019), narrative writing	Assume roles and explain in partner exercise; fundamental attribution error.
	Homework	Observing fundamental attribution error in everyday life in oneself
Unit 5	Discussing the homework - relevance of empathy for the teaching profession and introduction to "active listening"	Brainstorming on the relevance of empathy to the teaching profession and possible drawbacks.
	Homework	Practicing active listening among acquaintances
Unit 6	Role play	Various situations from the school context are acted out using the previously acquired knowledge
Unit 7	Sustainability	Letter to oneself
Unit 8 - 10	3 newsletters	One per week to sustain the concept of perspective taking

- **Pedagogy more important than empathy (JS_F4)** (sample item "Only pedagogical measures can solve students' school problems; emotional ties of teachers to their students, therefore, have no meaningful influence on solving school problems")
- **Student-centeredness (JS_F5)** (sample item "It is important to pay attention to a student's feelings during a conversation with them")

All factors have good internal consistency (all Cronbach's alpha > .60).

There were a total of 3 measurement time points: t1 as baseline before the start of training, t2 7 weeks later (after Unit 7), and t3 one week after the last newsletter, i.e., 11 weeks after the start of training.
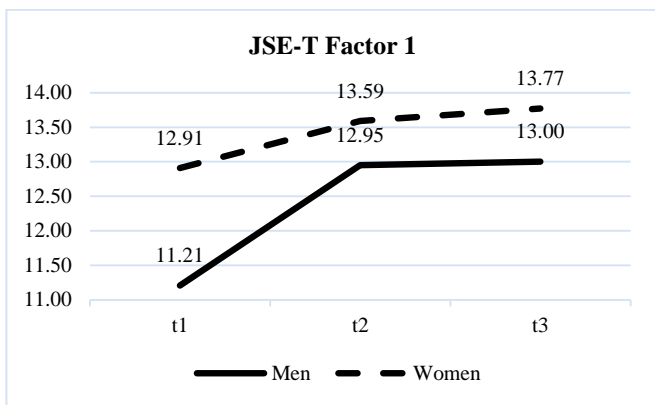
RESULTS

Figure 1 Estimated Marginal Means of the JSE-T factor 1

Table 2 Descriptive Statistics of the SPF factors PT and EC and the JSE-T factor 1

Sex	Time	Mean	Std. Error	95% Confidence Intervall	
				Lower Bound	Upper Bound
Measure: PT (SPF)					
male	1	15,550	,546	14,447	16,653
	2	17,050	,456	16,129	17,971
	3	17,350	,441	16,459	18,241
female	1	16,391	,509	15,363	17,419
	2	17,565	,425	16,706	18,424
	3	17,957	,411	17,126	18,787
Measure: JSE-T F1_Show_understanding					
male	1	11,200	,342	10,510	11,890
	2	12,950	,288	12,368	13,532
	3	13,100	,303	12,489	13,711
female	1	12,870	,319	12,226	13,513
	2	13,652	,269	13,109	14,195
	3	13,826	,282	13,256	14,396
Measure: Emotional_Concern (SPF)					
male	1	14,700	,468	13,755	15,645
	2	15,050	,506	14,028	16,072
	3	15,550	,507	14,526	16,574
female	1	16,609	,437	15,727	17,490
	2	16,652	,472	15,699	17,606
	3	17,217	,473	16,262	18,172

The increase in perspective taking ability measured by the JSE-T was nearly identical for male and female participants ($F(2,82) = 24.362$, $p < .001$, $Eta^2 = .373$), with the respective mean scores of female participants being constantly higher (significant only between the measurement times 1 and 2) than those of males at all measurement time points ($F(2,82) = 3.031$, $p = .054$, $Eta^2 = .069$). The largest change occurred between measurement time points 1 and 2, with the level of both groups then remaining stable at time point 3 (cf. Table 3).
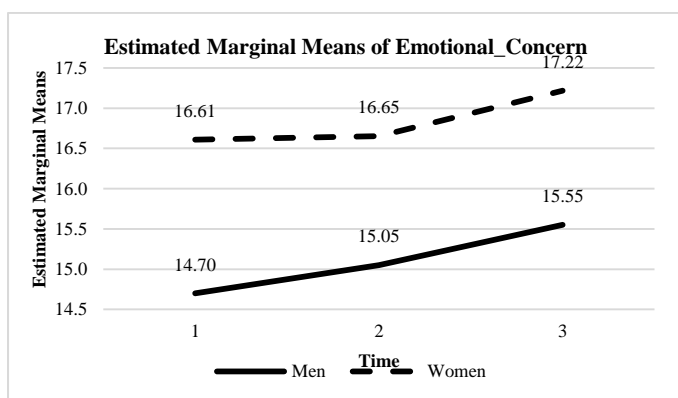
Table 3 Tests of Within-Subjects Contrasts of JSE-T F1_Show_understanding

Source	Time	Type III Sum of Squares	df	Mean Square	F	p	Partial Eta Squared
Time	Level 2 vs. Level 1	68,616	1	68,616	27,138	<,001	,398
	Level 3 vs. Previous	27,052	1	27,052	20,392	<,001	,332
Time * sex	Level 2 vs. Level 1	10,011	1	10,011	3,960	,053	,088
	Level 3 vs. Previous	2,261	1	2,261	1,705	,199	,040
Error (Time)	Level 2 vs. Level 1	103,663	41	2,528			
	Level 3 vs. Previous	54,390	41	1,327			

A similar picture was shown on the variable PT of the SPF.
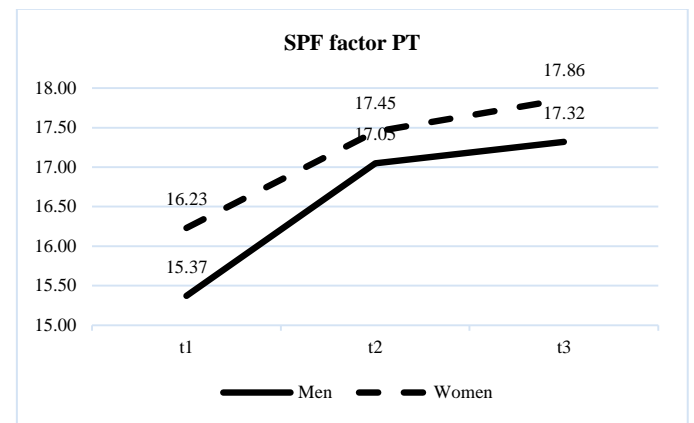
Figure 2 Estimated Marginal Means of PT

Table 4 Tests of Within-Subjects Contrasts of PT

Source	Time	Type III Sum of Squares	df	Mean Square	F	p	Partial Eta Squared
Time	Level 2 vs. Level 1	76,486	1	76,486	24,828	<,001	,377
	Level 3 vs. Previous	44,009	1	44,009	37,059	<,001	,475
Time * Sex	Level 2 vs. Level 1	1,138	1	1,138	,369	,547	,009
	Level 3 vs. Previous	,055	1	,055	,046	,831	,001
Error (Time)	Level 2 vs. Level 1	126,304	41	3,081			
	Level 3 vs. Previous	48,689	41	1,188			

We found a significant increase in PT after training ($F(2,38) = 24.869$; $p < .001$, $Eta^2 = .567$) regardless of gender ($F(1,39) = .963$; $p = .333$ $Eta^2 = .024$). Males and females benefited equally from training, with no change in PT levels between time points 2 and 3.

The increase in EC measured by the SPF was nearly identical for male and female participants ($F(2,82) = 3.374$, $p = .039$, $Eta^2 = .076$), with the respective mean scores of female participants being constantly (but not significant) higher than those of males at all measurement time points ($F(2,82) = 0.154$, $p = .857$, $Eta^2 = .004$).

Figure 3 Estimated Marginal Means of EC

DISCUSSION

Empathy training usually aims to improve perspective-taking skills, as this component of empathy is subject to greater cognitive developmental and environmental influences through maturation or learning processes. The empathy training for student teachers on which this study is based also successfully targets this component (Paulus & Meinken, 2022b). Following this pilot study, the question arose to what extent the changes might be gender-specific, i.e., whether men or women achieved different improvement outcomes. To this end, we used two different measures of cognitive PT that looked at state- and trait-oriented changes, respectively. On both measures, we were able to achieve significant gains in PT, consistent with the pilot study, which were also consistently detectable for several weeks after the end of the study. Both male and female subjects benefited equally from our training, but the developments were almost parallel. The initial difference in perspective taking remained, and the male subjects were never able to reach the level of the female subjects. This also showed that the empathy training does not favor or disadvantage any gender, all participants benefit equally from it.

It is interesting that the changes in perspective taking could be observed both situation-specific (JSE-T) and person-specific (SPF). This shows that the training was indeed able to achieve changes within the personality. We assume that the weekly "homework" in particular contributed to this, because it made it clear to the participants of the training that perspective-taking can be relevant in all social interactions in everyday life, be it in dealing with friends, fellow human beings or even situations that could possibly be prejudiced. Having a better understanding of one's peers and their behavior leads to improved social acceptance and interactions (Galata *et al*., 2011; Gehlbach *et al*., 2011; Ghasemian & Kumar, 2017), increased altruistic rather than selfish actions (Batson *et al*., 1987; Bengtsson, 2016), or more positive interactions with students (Altavilla *et al*., 2021; Wink *et al*., 2021).

A significant increase in the affective component EC was demonstrated, but only very slightly. This tended to be a slight improvement, and again was comparable in males and females. Although the sample was somewhat larger than in the first study, the sample size must still be seen as a limitation and a replication of the results must be attempted with larger numbers of test subjects. It would also be interesting to conduct direct interviews with the participants in order to test the hypothesis that the changes in everyday life are perpetuated by the "homework"; so far, this is a purely theoretical assumption.

CONCLUSION

Empathy training improves skills regardless of gender, the increase is almost the same for all. This also applies to the permanence of the improvement, both genders also benefit from the training successes over a longer period of time.

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