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Effects Of A 1.5-Day Empathy Training For Student Teachers

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Abstract:
Background*: Previous work has shown that an several weeks long empathy training for teacher students can be effective. However, a short, more economical empathy training for student teacher has not yet been investigated. This study aimed to examine whether an economically implemented empathy training program for 1.5 days can promote empathy skills, particularly the perspective-taking of student teachers.*
Materials and Methods*: The sample consisted of 62 student teachers from Saarland University. We used two questionnaires to review the effects before the training, after the first training day, and after the second training day. We used the German Version of the Interpersonal Reactivity Index (IRI) with the Jefferson Scale of Empathy for Teachers (JSE-T) to measure state- and trait-empathy. The evaluation focused on the items relating to perspective-taking.*
Results*: After the training, we found distinct improvements in perspective-taking and general attitude toward empathic behavior in the school context. In addition, we found improvements in the affective components and a reduction in personal distress.*
Conclusion: *The results indicate an economic way to improve empathy in teacher education. For further research, the question now arises as to whether the training can also be effective online or in an even shorter time, for example, as part of a one-day training course.*
Key Word*: empathy, empathy training, perspective taking, teacher education.*

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I. Introduction

Experts agree that empathy is a necessary skill for teachers to do their job effectively (Auernheimer, 2013; Cornelius-White, 2007; Hattie, 2009; Liekam, 2004). Nevertheless, the promotion of empathy is mostly neglected in teacher training. In addition, the current educational research literature still lacks evidence on the effectiveness of empathy training for teachers.

It has already been shown in the medical context that empathy can be improved through training. Empathy training for doctors, nurses, and medical staff had demonstrably good average effects and positive impacts on patient satisfaction (Fragkos & Crampton, 2020; Paulus & Meinken, 2022; Teding van Berkhout & Malouff, 2016). The training approaches were mainly aimed at promoting the cognitive component of empathy, i.e., perspective-taking (Butters, 2010; Fragkos & Crampton, 2020).

Based on knowledge from the medical context, we developed, implemented, and evaluated empathy training for student teachers in a pilot study (Paulus & Meinken, 2022b). The student teacher's empathy, particularly perspective-taking, improved significantly (Paulus & Meinken, 2022b). The training took place over several weeks, which is quite a long time. For this reason, we want to investigate in this study whether an economically applied empathy training program for student teachers is also effective in a shorter period of 1.5 days.

II. Theoretical Framework

Empathy is the ability to understand and share the internal state of others with the consequence of being able to respond appropriately. Empathy is, therefore, a process focusing on the emotional reactions of others, which includes an emotional reaction of one's own (Steins, 1998). There is a consensus in the literature that empathy is a multidimensional construct and contains at least affective and cognitive components (Cohen & Strayer, 1996; Davis, 1983; Dziobek et al., 2008). Davis (1983) categorizes the construct of empathy into four factors beyond the affective and cognitive components. The first factor, empathic concern (EC), is an affective component. It describes feeling with the observed feelings of another person and includes other-oriented emotions,

such as concern for people in distress. Another affective component is personal distress (PD). The focus here is on one's own anxiety and discomfort in situations in which others are anxious or in difficulty. High personal distress can inhibit helping behavior (Batson et al., 1981) and is also associated with burnout (Admiraal & Kittelsen Røberg, 2023; Mérida-López & Extremera, 2017). The fantasy scale (FS) can be categorized as an affective and a cognitive component. It is the tendency to empathize with the feelings and actions of fictional characters in films or books and to experience their emotions. The fourth factor, perspective-taking (PT), will be the focus of this study. Perspective-taking refers to the cognitive ability to understand a counterpart's thoughts and feelings and predict their behavior and reaction (Davis, 1983). It involves the attempt to leave one's own perspective in certain situations and view the situation from the other person's point of view. The decisive factor here is not the actual success in understanding the other person's point of view but the active and conscious endeavour of the individual to see the world through another person's eyes (Vorauer, 2013). Empathy and perspective-taking correlate positively with agreeableness and openness (Paulus, 2016) and are considered essential factors in coping with socially challenging situations (Jerusalem & Klein-Heßling, 2002). In this context, they favor, for example, the forgiveness of a specific offense (McCullough et al., 1998; McCullough, Worthington, & Rachal, 1997) or the ability to forgive in general (Berry et al., 2001; DeShea, 2003). Empathic people do not approach conflicts aggressively but rather constructively (Richardson et al., 1994), whereas juvenile offenders show less cognitive empathy than non-offending adolescents (Kaplan & Arbuthnot, 1985).

Jean Piaget (1932) and George H. Mead (1934) already described the ability to adopt perspectives ("the ability to decenter") as part of social and cognitive development. Selman (1980) shows several levels of socio-moral development in the ability to adopt social perspectives. Between the ages of three and eight, children only have undifferentiated assumptions about the thoughts and motives of other people; they do not distinguish between external behavior and internal drives. At this early age, they can already recognize the basic emotions of fear, sadness, and joy based on facial expressions (Silbereisen, 1995) but do not yet distinguish between their own and other people's reactions in certain situations.

The ability to see oneself from another person's perspective only develops from around seven to twelve, accompanied by the realization that emotions can also be feigned or that competing experiences (e.g., curiosity and insecurity) can occur in parallel. The highest level, according to Selman (1980), is social-symbolic perspective taking and describes the realization that not all motives and emotions can be developed self-reflectively and that relationships between people can exist on several levels (superficial to deeper) (Jerusalem & Klein-Heßling, 2002).

Perspective-taking has excellent advantages for teachers in particular. They are better able to respond to students' problems and solve them more effectively (Gehlbach, Brinkworth, & Harris, 2012; Warren, 2017), which leads to a better teacher-student relationship (Barr, 2011; Gehlbach, Brinkworth, & Harris, 2011) and better classroom management (Stojiljković, Djigić, & Zlatković, 2012; Warren, 2013). Empathic teachers recognize problems among students more quickly (Mishna et al., 2012) and are, therefore, more likely to intervene (Craig, Henderson, & Murphy, 2000). A meta-analysis by Cornelius-White (2007) also showed that a teacher's empathy was the strongest predictor of students' positive development regarding their learning success and social behavior at school.

As perspective-taking has a very low heritability coefficient in contrast to affective empathy (Melchers et al., 2016), almost all known empathy training programs aim to promote this cognitive ability (Bas-Sarmiento et al., 2017; Fragkos & Crampton, 2020; Paulus & Meinken, 2022b; Shaffer et al., 2019; Wündrich et al., 2017). The duration of training varies from short-term (1-2 hours or days) (Alhassan, 2019; D'souza et al., 2020; Lobchuk et al., 2018; LoSasso et al., 2017; Shaffer et al., 2019) to several weeks (Paulus & Meinken, 2022b) or months (Mehta et al., 2021). Several meta-analyses showed no direct effect of training duration on effectiveness (Fragkos & Crampton, 2020; Paulus & Meinken, 2022a; Winter et al., 2020). However, many short training sessions have already shown effectiveness (Daniels, Denny, & Andrews, 1988; Larti, Ashouri, & Aarabi, 2018; Alhassan 2019; Lor et al., 2015). Studies on training in teacher education are relatively rare (Aldrup, Carstensen, & Klusmann, 2022; Aparicio-Flores et al, 2020; Little & Maunder, 2020; Paulus & Meinken, 2022b; Shteinmets, 1983). The data from the training courses and studies cited above are predominantly from the field of medical and nursing training. Although the actual research subject of perspective taking is similar, the populations of the samples are very different, as students on teacher training programs have a higher variance in the subjects of study or also in their A-level grades, which is why the results of the studies from the field of medicine cannot be directly transferred to the teacher training students. The training content must also be adapted to the professional context of the test sample. In a pilot study, Paulus & Meinken (2022b) were able to show that a training program lasting several weeks significantly improved the empathy, in particular the perspective-taking, of student teachers.

When conducting professional empathy training as part of teacher training or further training, the question of the cost-effectiveness of the training program is also relevant. This is why a training program with a shorter duration is of interest. In this study, we want to investigate the questions,

1. whether it is possible to achieve positive effects in promoting the ability to adopt perspectives in student teachers with an economically applied training program lasting 1.5 days, and
2. whether the training can also have an influence on the other empathy components described above.

III. Material And Methods

Sample

The sample consisted of 62 student teachers from Saarland University from two empathy training programs with identical content. Due to missing values, the sample size was reduced to n = 61 at measurement time two and n = 59 at time three. A total of 52 participants were female, and the average age was 22.84 years (min. 19 years, max. 34 years). No control group was included, as in 1.5 days, no substantial changes in personality are to be expected without intervention. Furthermore, an earlier study showed no significant changes in a control group even after eight weeks (Paulus & Meinken, 2022).

Procedure

The training took place in the form of a block event on a Friday and Saturday and lasted a total of 8 hours with short breaks (Friday 5 hours, Saturday 3 hours). The first measurement time was before the training, the second at the end of the first training day (Friday), and the third at the end of the training (Saturday).
The training content (see Table no 1) was based on the topics described in Paulus and Meinken (2022b) but without the weekly homework assignments. In addition, a unit on the topic of communication was added. At the suggestion of previous participants, "active listening" was enriched with more general information on the topic.

Table no 1: Training content

Unit 1	Theory & relevance of topic	Theoretical overview of the concept of empathy in general
Unit 2	Case Study	Work on case studies from everyday student life in group work
Unit 3	Own Experience	In group work: situations in which one has (not) felt understood
Unit 4	Exercise 500 years Narrative writing (Shaffer et al., 2019)	Assume roles and explain in partner exercise; fundamental attribution error
Unit 5	Communication & Exercise active listening	Theory & active listening
Unit 6	Role play	Various situations from the school context are acted out using the previously acquired knowledge

Measurement instruments

Two different measurement instruments were used to measure empathy. To determine trait empathy, we used the Saarbrücken Personality Questionnaire (SPF) (Paulus, 2009; Paulus, 2012), a German version of the Interpersonal Reactivity Index (IRI) by Davis (1983). This comprises the affective and cognitive factors of empathy described above, perspective taking (PT), empathic concern (EC), personal distress (PD), and the fantasy scale (FS). The four factors are each measured with four items on a five-point Likert scale. The range in which people are asked to categorize themselves ranges from 1 (never) to 5 (always), with a maximum score of 20 points to be achieved for each factor. The SPF has good internal consistency (Cronbach's alpha between .75 and .80) and apparent factorial validity (Paulus, 2009).

Based on the studies from the field of medical training to measure the more context-specific cognitive empathy, we also used the Jefferson Scale of Empathy for Teachers (JSE-T) (Paulus & Klopp, 2023; Paulus & Meinken, 2022b), a version of the Jefferson Scale of Empathy (JSE) by Hojat et al. (2001) that has been specially adapted to the educational context. This measures attitudes towards empathic behavior in dealing with students and problem situations at school and consists of 5 factors. Perspective taking (F1) is measured with three items in this questionnaire. The second factor, emotional understanding of students (F2) is recorded with four items; perspective taking with students problematic (F3), pedagogy is more important than empathy (F4), and student-centeredness (F5), each with two items. A five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree) is also used here. This questionnaire has good factorial validity and good internal consistency (Cronbach's alpha between .64 and .75) (Paulus & Klopp, 2023; Paulus & Meinken, 2022b).

Statistical analysis

The statistical software SPSS 28 was used to analyze the data collected for this study. A significance level of $p < .05$ was set for all calculations to establish statistical significance.

Firstly, a multivariate analysis (MANOVA) was used to check whether the two groups differed in all dependent variables at the first measurement point. To answer the first research question a repeated measures ANOVA for both perspective-taking components with pairwise comparisons for the three measurement times was conducted. To answer the second question, the same analysis as in research question one was repeated for the remaining components.

IV. Results

A MANOVA showed no significant differences between the two courses, $F_{(27, 31)} = 1.71$, $p = .75$, *partial* $\eta^2 = .59$. Descriptive statistics for three measurement times for all participants together are shown in Table no 2.

Table no 2: Descriptive statistics for three measurement times

Factor	Measurement time1		Measurement time 2		Measurement time 3	
	M	*(SD)*	*M*	*(SD)*	*M*	*(SD)*
PT[a]	15.68	(2.42)	16.56	(2.17)	17.05	(2.16)
EC[a]	16.44	(2.35)	16.95	(2.07)	17.27	(2.03)
PD[a]	11.69	(2.61)	11.62	(3.35)	11.05	(3.72)
FS[a]	15.90	(2.48)	16.02	(2.66)	16.14	(2.75)
F1[b]	13.23	(1.36)	13.74	(1.26)	14.24	(1.19)
F2[b]	18.05	(1.80)	18.52	(1.46)	18.95	(1.29)
F3[b]	6.16	(1.38)	6.48	(1.34)	6.15	(1.58)
F4[b]	3.00	(1.39)	2.77	(1.02)	2.71	(1.31)
F5[b]	8.85	(1.17)	9.18	(1.16)	9.51	(.81)

M = arithmetic mean; SD = standard deviation, a = SPF, b = JSE-T

Research question 1: Perspective-taking

A repeated measures ANOVA determined that mean scores showed a statistically significant difference between measurement times for PT ($F_{(2, 116)} = 19.27$, $p < .001$, *partial* $\eta^2 = .25$ and for F1, $F_{(2, 116)} = 23.85$ $p < .001$, *partial* $\eta^2 = .29$). Accordingly, an increase in perspective taking was demonstrated by both the SPF and the JSE-T. In Table no 3 the changes from the starting point are shown and are significant for both PT and F1. In addition, the changes from the end of the first training day to the end of the entire training are shown, whereby these were not significant for PT but were significant for F1.

Table no 3: Pairwise comparisons for the three measurement times of perspective-taking

Measurement Time		Mean Difference	Std. Error	p	95% Confidence Interval for Difference	
					Lower Bound	Upper Bound
PT						
1	2	-.88	.19	<.001	-1.35	-.40
1	3	-1.27	.24	<.001	-1.86	-.67
2	3	-.39	.19	.146	-.86	.08
F1						
1	2	-.52	.15	.003	-.89	-.15
1	3	-.98	.14	<.001	-1.34	-.62
2	3	-.45	.13	.003	-.78	-.13

Research question 2: Changes in unintended components of empathy

A repeated measures ANOVA determined that mean scores showed a statistically significant difference between measurement times for EC ($F_{(2, 116)} = 9.35$, $p < .001$, *partial* $\eta^2 = .14$), PD with Greenhouse-Geisser correction ($F_{(1.66, 96.08)} = 5.78$, $p = .007$, *partial* $\eta^2 = .09$), for F2 with Greenhouse-Geisser correction ($F_{(1.32, 76.39)} = 10.17$, $p < .001$, *partial* $\eta^2 = .15$), and for F5 ($F_{(2,116)} = 8.36$, $p < .001$, *partial* $\eta^2 = .13$). No statistically significant difference between measurement times were found for FS with Greenhouse-Geisser correction ($F_{(1.56, 90.56)} = 0.22$, $p = .752$, *partial* $\eta^2 = .01$), for F3 ($F_{(2,116)} = 1.59$, $p = .209$, *partial* $\eta^2 = .03$), and for F4 with Greenhouse-Geisser correction ($F_{(1.57,91.04)} = 1.24$, $p = .289$, *partial* $\eta^2 = .02$).

For the significant differences the pairwise comparisons for the three measurement times of the other components are shown in Table no 4. The changes from the starting point are significant for all these components at the third measurement time but only for emotional concern at the second measurement time. In addition, the changes from the end of the first training day to the end of the entire training are significant for personal distress and emotional understanding.

Table no 4: Pairwise comparisons for the three measurement times of components with general significant measurement differences

Measurement time		Mean Difference	Std. Error	p	95% Confidence Interval for Difference	
					Lower Bound	Upper Bound
EC						
1	2	-.45	.18	.041	-.90	-.01
1	3	-.72	.18	<.001	-1.18	-.27
2	3	-.27	.14	.187	-.62	.08
PD						
1	2	.01	.21	1.000	-.51	.55
1	3	.64	.25	.042	.01	1.27
2	3	.62	.16	<.001	.21	1.04

F2						
1	2	-.49	.23	.110	-1.05	.07
1	3	-.89	.23	<.001	-1.47	-.31
2	3	-.40	.10	<.001	-.66	-.14
F5						
1	2	-.37	.16	.075	-.77	.02
1	3	-.64	.16	<.001	-1.05	-.23
2	3	-.27	.14	.198	-.62	.08

V. Discussion

The results of the 1.5-day empathy training show that the effects of the pilot study (Paulus & Meinken, 2022) could also be achieved in a shorter period. The training led to an increase in the student teachers' perspective taking as a general personality trait on the one hand and an improvement in their context-specific attitude on the other. The increase in perspective-taking as a personality trait was achieved after the first day of training; the second day had no further significant influence. The context-specific attitude to perspective-taking was significantly increased both after the first training day and also on the second day. One possible explanation could be that perspective-taking was practiced more generally on the first day and increasingly in a school context on the second day.

The attitude towards student-centeredness was also improved beyond perspective-taking, which was only significant at the end of the training, at measurement time 3. The attitude that pedagogy is more important than empathy remained relatively the same due to the training. This may be because the approval ratings for this factor were already rather negative at the beginning. The attitude that adopting the students' perspective is difficult also remained the same due to the training. This does not contradict the training objective, as this did not consist of changing the students' assessment of the difficulty of adopting perspectives. Instead, the training focused on the attempt to adopt a perspective, which was also discussed critically with the participants. After all, it is difficult to prove whether perspective-taking is successful. For example, it is not possible to prove whether a teacher understands precisely in which situations and with which feelings the student is struggling.

In addition to the agreement with emotional understanding, this study significantly improved the component of emotional concern, which tends to be more stable. Although affective components are more stable than cognitive components, emotional concern has already shown a significant improvement after the first day. In contrast, significant improvements were only found for emotional understanding at the end of the training, which can be explained by the fact that the focus was only placed on the school context on the second day. The assumption that affective empathy is also strengthened through the promotion of perspective-taking (Fernandez & Zahavi, 2021; Kataoka et al., 2019; Riess et al., 2012) could therefore be confirmed based on this study. This could be due to the average correlation between PT and EC factors with r = .45 (Paulus, 2012).

In addition, the participants' personal distress decreased significantly at the third measurement point. It is known that an increase in personal distress can impact the development of burnout (Admiraal & Kittelsen Røberg, 2023; Mérida-López & Extremera, 2017). However, the training results indicate that the distress factor tends to be weakened and, therefore, does not create a risk of burnout.

The training was evaluated using a pre-post-post measurement. However, the measurement after the first and the second day only provides information about the effectiveness directly after the training. No statements can be made about the long-term effect of the training. We will, therefore, test the participants again after two months to check whether the changes in their ability to adopt perspectives and their attitude towards empathic behavior in a school context are maintained over such a period after the training. In particular, the question arises as to whether the lack of homework in this block training makes a decisive difference compared to the training.

Two complementary questionnaires were used to measure empathy skills. However, no statements can be made about the training content's transfer effects and the participants' actual empathic behavior using these measuring instruments. However, the feedback from the participants can at least be understood as an indication that they are taking what they have learned into account and trying to implement it in their everyday lives: "I have been trying to integrate this into my everyday life ever since", "The knowledge gained from the seminar has only had a positive effect on my everyday life so far, although it has only rarely been used".

VI. Conclusion

As part of this work, an economically applied empathy training program was developed, implemented, and evaluated over a period of 1.5 days with a focus on perspective taking. The results indicate an economic way to improve empathy in teacher education. There were clear improvements in perspective taking, affective components and general attitudes towards empathic behavior in the school context. For further research, the question now arises as to whether the training can also be effective online or in an even shorter time, for example as part of a one-day training program.