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The role of empathy in the development of social competence: a study of German school leavers

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ABSTRACT

The present study investigates how the components of social competence relate to the core components of empathy. It offers a systematic analysis of the effects of the independent variables – emotion recognition accuracy, emotional perspective taking and affective responsiveness – on the dependent variables – action evaluation, consequence anticipation, goal attainment and competence expectations. The study's population, which was subjected to cross-sectional analysis, consisted of 130 mainstream school leavers. Structural Equation Modelling yielded a specified model which showed that the factors of evaluation of actions and anticipation of consequences were most strongly impacted by the level of emotional perspective taking. In addition, the empathy components were found to be positively correlated variables.

The findings are discussed in the light of current work on social information processing, and their relevance to educational practice is explored.

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Social competences; empathy; mainstream school leavers; social-cognitive information processing

Introduction

Social skills are among the important key competencies called for today in a job market characterized by faster job turnover and the concomitant need for adaptability (Maier & Rappensperger, 1999). Lack of social competence among lower-performing, regular-school leavers jeopardizes sustainable school-to-work transitions even in the improved German job market prevailing since 2006 (Dustmann, Fitzenberger, Schönberg, & Spitz-Oener, 2014). Hence, success in long-term employment and in fighting dropout rates (Hillenbrand, Vierbuchen, & Hagen, 2012) depends heavily on regular-school leavers' social competence and a realistic assessment of their abilities (Solga, Baas, & Kohlrausch, 2012). To achieve a favourable work integration and development, especially given the ongoing changes in the pupil population, Brattig (2013) sees a strong need for opportunely fostering social competence (Fath, 2011).

Following Döpfner (1989) as well as Hinsch and Pfungsten (2015), we can describe social skills as available actional, cognitive and emotional modes of behaviour. Socially competent behaviours are, on the one hand, useful in achieving objectives in social interactions, such as in establishing contact or asserting oneself. At the same time, however, they also evidence regard for the interests of the interlocutor, helping to elicit an appropriate, effective and cooperative reaction. Cognitive factors and emotions as sometime empathic components are integral elements of every stage in a social interaction (Crick & Dodge, 1994; Döpfner, 1989). Intrinsic abilities for effective, appropriate social interaction therefore are highly relevant in the work context, and so are essential for

preparing teenagers for it. Thomas, Jänsch, und Niedermaier (2006) stress that only basic knowledge and behavioural processes of the social interaction can produce goal-appropriate behaviors. That said, training in social competence that does not first empirically validate its potentially effective subcomponents will only result in superficial rote behaviors.

Integrated working model for social information processing

The expanded and integrated working model developed by Thomas et al. (2006) is particularly apt for acquiring the unique social competence subcomponents (*action evaluation, consequence anticipation, goal attainment, competence expectation*) as situation-independent and modifiable abilities and proficiencies in social interactions (Döpfner, 1989). The subprocesses were distilled from various approaches to social information processing and described sequentially in simplified terms as ordered individual phases: (Crick & Dodge, 1994; Döpfner, 1989; Hinsch & Pfungsten, 2015)

- (1) The reference point is the selective *perception* and its degree of differentiation of all relevant social cue stimuli of a person.
- (2) After perception follows the *interpretation of the signals* by which one ascribes intentions, motives, and emotions to an interaction partner.
- (3) After interpretation comes *goal setting*.
- (4) Next a set of qualitatively-good *action alternatives* is developed.
- (5) This is followed by a phase of *anticipating several consequences*.
- (6) In the next step, the action alternatives are evaluated in light of the *expected outcomes and competence expectation*.
- (7) In this step, an *action alternative* is decided on.
- (8) A firm *action plan* is then created.
- (9) Finally, *taking the action* results in calibrating one's own applicable abilities.
- (10) Processing the action consequences completes the cycle.

Feedback processes are disregarded in this process. Also, the phases do not proceed strictly one after the other, but parallel each other instead in reaction to different stimuli. Self-modifying cognitive background factors continually synchronize with each other. (Crick & Dodge, 1994).

Similar social information processing models have previously been used in several studies to test social competence. One study, based on Lemerise and Arsenio (2000), investigated promoting socioemotional skills with Faustlos curricula in a total of 21 elementary schools in the areas of *empathy, impulse control, and dealing with anger and rage*. The results delivered positive findings on the ability to see things from another's perspective, cooperate, and adhere to social rules. (Schick, 2016).

Social competence as empowering successful social interactions with other people and handling conflicts constructively was examined by another study of a total 136 aggressive young people between the ages of 16 and 22. It was based on a social problem-solving model as a construct analogous to Crick and Dodge's theoretical model. It showed that the participants boosted their ability to adopt another's perspective on the cognitive level as well as their capacity for empathy. (Bach & Kratzer, 2016).

Components of empathy

In the expanded and integrated working model by Thomas et al. (2006), cognitive factors, together with the influences of emotional process components (Adolphs & Damasio, 2000; Lemerise & Arsenio, 2000), form the foundation of human empathy, whose main components are to be found primarily in process models (Baron-Cohen, 2009; Decety & Jackson, 2004, 2006; Shamay-Tsoory, 2009).

The earliest conceptualizations of the notion of *empathy* go back to the German psychologist Theodor Lipps (1897) and the American psychologist Edward B. Titchener (1909). They included in them reactions exhibited by people watching others undergo experiences. (Gerdes, Lietz, & Segal, 2011). Over time, the idea of *empathy* saw widespread differentiated use in partly stratified concepts. Two research traditions either distinguish unilaterally between the affective and the cognitive empathic processes, or, in the newer tradition, view these processes as tightly intertwined. (Decety & Jackson, 2006). Hoffman (2000) describes empathy as an affective reaction that is more attuned to the other person's situation than one's own. In this definition, we can also assume empathic reactions as being accompanied by cognitive components. To partake intimately of the emotional state or intent of a person from one's own experience and thereby comprehend them, the conceptual approach of a Bischof-Köhler (1998) to *empathy*, in a rather general formulation, makes room for the inclusion of both affective and cognitive facets.

Feshbach (1979) in the three-component model thus more clearly emphasizes under cognitive aspects the facets of the components *emotion recognition accuracy* and *emotional perspective taking*. By contrast, under the affective aspect, the focus is more on *affective responsiveness* (Bischof-Köhler, 1989). In the present study, we rely on the definitional approach of Derntl et al. (2010). They adopt the notion of *empathy* as a 'multidimensional construct' which 'requires the ability to perceive, understand and feel the emotional states of others' (p. 2). We can distill the following three core components for the empathy construct from an understanding of differing approaches (Decety & Jackson, 2004; Decety & Lamm, 2006; Decety & Moriguchi, 2007):

- (1) *Emotion recognition accuracy*: The ability to distinguish between one's own emotions and those of other people by recognizing emotional facial stimuli, to differentiate between speech and behavioral emotional expressions.
- (2) *Emotional perspective taking*: Ability to understand another's emotional state regardless of subjective accessibility.
- (3) *Affective responsiveness*: This, once more, is the ability to share the emotional states of others. The observer becomes conscious of simulating the feeling and not of the own emotion.

We will now discuss the three paradigms of the empathy construct in the light of two substantively distinct major theoretical currents, *simulation theory* and *theory-theory*.

- (1) Simulation theory is important for *emotion recognition accuracy* and *affective responsiveness*. It describes an understanding of the behaviour and mental states of other people using internal simulations (Goldman, 2006). The instant access to one's own mental events through internal and hence recollected bodily processes accordingly forms the basis for human interaction and communication (Breithaupt, 2009). Reading facial expression thus becomes a decisive attribute of social cognition (Bora, Eryavuz, Kayahan, Stungu, & Veznedaroglu, 2006). Especially in social contexts, mimic emotional expressions contribute to successful interactions through accurate prediction and adaptation of people's behaviour. (Fridlund, 1991). They send and receive social information, disclosing the interaction partner's underlying emotional state (Ekman, 2004; Hampson, van Anders, & Mullin, 2006; Izard, 1994; Russell, 1997). Despite disagreements among researchers over the number of basic emotions, Ekman (1988) ascribes to anger, fear, disgust, sorrow, happiness and surprise a specific mimic expressive mien. All of them differ only minimally in the cultural or prevailing context. Surprise, in Russell's (1997) *two-dimensional theory*, however, takes no unequivocally positive or negative valence, meaning that as a cognitive state it tends to evoke or intensify emotions instead. (Ortony, Clore, & Foss, 1987; Ortony & Turner, 1990). Emotions experienced by the self in situations ultimately let us project them onto another person's state, since they make it easier to imagine what the other is currently thinking and feeling (Decety & Jackson, 2004; Goldman, 1992; Harris, 1992).

- (2) In *theory-theory*, on the other hand, *emotional perspective taking* in any given individual commands unconscious, implicit theories that are based on subjective knowledge and own experience (Carruthers, 1996). One's own subjective understanding of other people's actions and thinking here transpires deliberately to anticipate and understand behaviours. (Bischof-Köhler, 1989). The intuitive theory that *emotional perspective taking* is based on links closely to comprehending one's own and the other party's mental states. It happens by attributing desires and convictions, in other words, what we know, want, think, and feel in the sense of a *theory of mind* (ToM) as cognitively complex components (Sodian, Perst, & Meinhardt, 2012). Understanding one's own states and those of others goes on concurrently in the developing child (Gopnik & Wellman, 1994).

Aims of the study

Connections between the capacity for emotion recognition accuracy and a broadly posed empathy concept in the information processing model could be documented, for example, in learning-disadvantaged, misbehaving and delinquent youths (Nestler & Goldbeck, 2009; Thomas, Fuchs, Ferbar, & Gröbl, 2014). Eisenberg and Miller (1987) concluded in her earlier research that even given varying working definitions, a significant positive correlation existed in relevant empathy studies between empathy and prosocial behaviour. That said, to date no studies are known that explicitly investigate the effects between compiled social competence measures and the empathy components elicited here from youths transitioning into a job. Additional studies of the secondary school area therefore take on heightened importance since we cannot assume that the findings on the specific cohorts can be transferred directly to the regular school area. In all phases of the working model by Thomas, Jänsch, Niedermaier (2006), cognitive and emotional aspects furnish the basis for decisions on the future behaviour of the pupils. Therefore, a positive interdependence of each of the individual core components of empathy is conceivable for the social competence dimensions of *consequence anticipation*, *action evaluation*, *goal attainment*, and *competence expectation*.

Thus, in the present study, we focus explicitly on the following research topics:

- (1) School leavers with greater *emotion recognition accuracy* abilities evaluate more confidently what happens in a social interaction, anticipate the potential consequences of an action better, and possess a more favorable competence expectation.
- (2) A higher degree of *emotional perspective taking* in a social interaction leads to a more elaborate action evaluation, more favorable assessment of goal attainment, more reasonable anticipation of possible consequences and a more positive competence expectation.
- (3) The degree of *affective responsiveness* in a social interaction tends to produce more adequate assessments of both goal attainment and competence expectation.

Methodology

Participants

Participating in the study were 130 youths aged 14 to 17 years (M age = 15.4 years, SD = 0.9) from nine graduating classes in rural and urban secondary modern schools. The sample comprised 47 female pupils (M age = 15.7 years, SD = 1.3) and 83 males (M age = 15.2 years, SD = 1.2). The gender distribution of the study participants reflected one normally found in a regular school class.

Procedures

We conducted the surveys over two consecutive days. The pupils worked on the three components of empathy capacity and the intelligence testing in a class context using largely nonverbal *paper-and-pencil* tests during two class periods each morning. We gathered the data on social

competence measures via the computerised diagnostic instrument during a second session in the school computer lab from small groups supervised by trained staff. The test administrator saw to it that the youths could not influence each other's answers during the testing.

Measurements

Intelligence

For testing general cognitive ability, we used the Standard Progressive Matrices (SPM) nonverbal intelligence method by J. C. Raven. The pupils each solved five sets of twelve graphical test problems, each with increasing degrees of difficulty (Horn, 2009).

Emotion recognition accuracy

We collected the data on *emotion recognition accuracy* with 37 context-free color photographs taken from the short-form *Vienna Emotion Recognition Tasks* (Pawelak, 2004). They show one of the basic emotions (anger, fear, sadness, disgust, happiness) or an expressionless Caucasian face. Via the *forced choice* questionnaire technique, the pupils chose one of six prescribed categories for each face. The order of the evoked emotive expressions by Gur et al. (2002) was randomized without any time specification. This material has previously been used successfully in several studies on emotion recognition accuracy (Derntl et al., 2009; Fitzgerald, Angstadt, Jelsone, Nathan, & Phan, 2006; Habel et al., 2007; Moser et al., 2007). The calculated internal coherence alpha was 0.70.

Emotional perspective taking

We tested for the second empathy component of *emotional perspective taking* with 37 color photographs, each showing two interacting Caucasians in everyday situations – six situations per basic emotion and neutral contexts. One of the Caucasian's faces was shown covered in each item. The pupils were asked to choose from among the answer alternatives the correct one for the masked face based on the posture and mimic facial expressions of the interaction partner. The context-free scenarios were taken from Derntl et al. (2009), Derntl et al. (2010)), and the answer stimuli once again came from the Gur et al. (2002) database of faces. The scenarios were presented randomly and without specifying the time for working on them. The test yielded an acceptable value for internal coherence ($\alpha = 0.72$).

Affective responsiveness

This test contained 37 short sentences from the daily life of the youths designed to induce one of the five basic emotions or that were neutral in their emotional content. The sentences were taken from Derntl et al. (2010), but in this case adapted for the school context. The stimuli were randomized; time to work on each was not limited. The answers took the form of select facial expressions from the Gur et al. (2002) stimulus material. Numerous validation studies, in which over 70% of participants correctly assigned sentences to one of the five basic emotions preceded our study (Derntl et al., 2009). The internal consistency calculated was an acceptable Cronbach α of 0.78.

Diagnostic of social competence measures

To measure social competence, we made use here of the picture-based diagnostic instrument developed by Thomas et al. (2006), based on the above-described model of social information processing. The computerized instrument consists of twelve confrontational social interactions between apprentices or between apprentices and a supervisor. Each scene depicts a series of realistic photographs with accompanying speech visualized in dialogue balloons. In each scene, the apprentices are trying to achieve an outcome but which the interaction partner turns down. At this point in the video sequence, the study participants for the first time are asked to

rank three types of likely alternative actions: aggressive, uncertain-avoiding, as well as socially competent (*action evaluation*). (Thomas et al., 2006). In the uncertain-avoiding action alternative scenario, the identification figure gives up on the goal; in the aggressive skit, the person insists on it in a socially inappropriate manner; and, in the socially-competent version, the apprentice affirms the demand in a socially acceptable manner (Hinsch & Pfingsten, 2015). Using a four-point scale (very easy, easy, difficult, very difficult), the youths then rated their own possible implementation of the variants (competence expectation). In the scene's third segment, using sequential brief sentences, data on *consequence anticipation* and *goal attainment* in each action alternative were gathered by having participants rank them on a four-point Likert scale (disagree, disagree somewhat, agree somewhat, agree).

Data analysis

We processed the data with the *SPSS Statistics 24* software and defined a structural equation model with *Amos Graphics* (v. 24.0). *AMOS* let us perform model specifications and assess the overall model using various quality criteria.

Results

Intelligence

In SPM, the intelligence values for the entire sample are distributed in the lower average. ($N = 130$, $M_{IQ} = 91.7$, $SD = 12.8$). Applying the categories of Quaiser-Pohl and Rindermann (2010), we recorded IQ values that were far below-average for seven youth (< 70), below average for 46 regular school graduates (70 to 84), average for 70 male and female pupils (85 to 114). For seven regular school pupils, the above-average values ranged from 115 to 129.

Correlations between the variables

In the next step, we checked the correlations between the measures for social competence as dependent variables and the core components of empathy capacity as independent variables (Table 1). In the process, the scales from the picture-based diagnostic instrument calculated, after a summing up of twelve scenarios, the four aggregate scores: *action evaluation*, *consequence anticipation*, *goal attainment* and *competence expectation*. The five basic emotions from each of the

Table 1. Spearman's r correlations between the four measures of social competence (sc) and the three components of empathy (e) ($N = 130$).

	1	2	3	4	5	6	7
1 action evaluation (sc)		0.45**	0.39*	0.58**	0.51**	0.66**	0.40**
		0.39**	0.36**	0.49**	0.43**	0.60**	0.36**
2 consequence anticipation (sc)			0.34*	0.61**	0.27**	0.64**	0.32**
			0.28**	0.56**	0.24**	0.53**	0.30**
3 goal attainment (sc)				0.64**	0.26*	0.12**	0.17**
				0.50**	0.23**	0.09**	0.13**
4 competence expectations (sc)					0.37**	0.49**	0.36**
					0.32**	0.41**	0.31**
5 emotion recognition accuracy (e)						0.43**	0.36**
						0.35**	0.31**
6 emotional perspective taking (e)							0.64**
							0.52**
7 affective responsiveness (e)							

** $p < 0.01$ * $p < 0.05$

Notes: Grey print = Adjusted correlation without influence of the third variable *intelligence*

three empathy testing procedures were aggregated so that each had a combined score. This was followed by correlating the dependent and independent variables:

The individual scales for social competence and the compiled components of empathy capability evidenced medium to strong positive correlations with and without controlling for confounding variables. Assessing the *action evaluation*, *consequence anticipation*, *goal attainment* and *competence expectation* of the study participants for action implementation suggests that these scales are contentually connected. The surveyed measures of empathy capability turned out to be dynamic components dependent on each other that are just as clearly positively correlated to the measures of social competence. Notable relationships under control of the *intelligence* confounding variables (in grey) result from *action evaluation* and *emotional perspective taking* ($r = 0.60$, $p < 0.01$) and from *consequence anticipation* and *emotional perspective taking* ($r = 0.53$, $p < 0.01$).

However, we did not include the values from the intelligence testing in the regression analysis and structural equation modelling in presenting their results, so that we could correctly gauge the extent of the causal disposition of the measured relationships between the individual measures.

Regression analysis

Action evaluation: Multiple regression analysis shows that *emotion recognition accuracy* and *emotional perspective taking* weigh heavily on *action evaluation*: [$F(2,127) = 42.37$, $p < 0.001$]. Together they resolve 43% of the variation in *action evaluation* in a social interaction, which corresponds to a strong effect after Cohen (1992) ($f = 0.87$).

Consequence anticipation: The noticeable influence of the independent variables *emotion recognition accuracy* and *emotional perspective taking* on the dependent *consequence anticipation* variable emerges clearly in the multiple regression analysis [$F(2,127) = 17.97$, $p < 0.001$]. The independent variables consequently explain 29.7% of the *consequence anticipation* dependent variables, corresponding to the strong effect after Cohen (1992) with $f = 0.65$.

Goal attainment: The regression analytic calculations also supply an explanation [$F(2,127) = 8.95$, $p < 0.001$] for the impact of the independent variables *affective responsiveness* and *emotional perspective taking* on the dependent variable *goal attainment* with an aggregate variance of 16.9%. After Cohen (1992) a middle effect ($f = 0.45$) results. This finding implies, however, that a large share of the variance in the *goal attainment* variables is due to variables not measured here.

Competence expectation: In addition, we calculated the effects of the independent variables *emotion recognition accuracy*, *emotional perspective taking*, and *affective responsiveness* on the dependent variable *competence expectation* [$F(3,126) = 12.16$, $p < 0.001$]. In the aggregate, the independent variables explain 22.4% of the variance in the dependent variable *competence expectation*, which corresponds to a middle effect t ($f = 0.54$).

Structural equation modelling (SEM)

The results from the multiple regression analyses next were supplemented by the compiled path diagrams and the model specification in AMOS. To resolve stepwise the effects of the independent variables (ξ) on the dependent variables (η) in the integrated working model, we checked several model variations in AMOS, which eventually led to the following solutions (Figure 1) excerpted in this study:

The relationship of the independent variables in the matrix yields the highest correlation between *affective responsiveness* and *emotional perspective taking* ($r = 0.52$, $p < 0.01$). The matrix further shows positive correlations between the variables *emotion recognition accuracy* and *affective responsiveness* but also between the variables *emotion recognition accuracy* and *emotional perspective taking* ($r = 0.31$, $p < 0.01$), ($r = 0.35$, $p < 0.01$).

Beyond that, we needed to examine the individual weights on the dependent variables in the structural model:

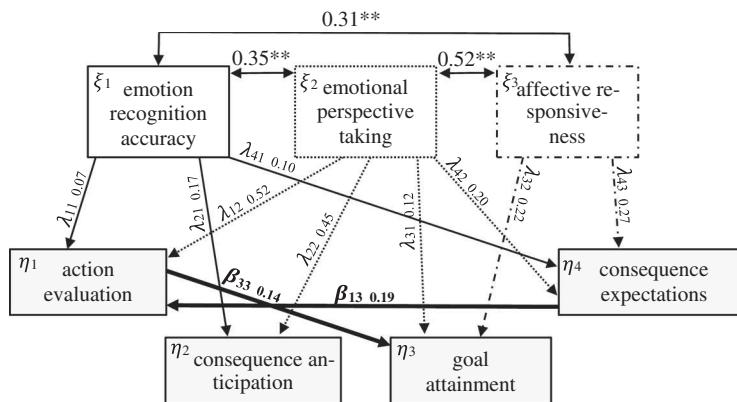


Figure 1. Path diagram of independent variable on dependable variables.

Action evaluation (η_1): Pointing to the dependent variable *action evaluation* are significant influences of the independent variables *emotion recognition accuracy* ($\lambda_{11} = 0.07$) and *emotional perspective taking* ($\lambda_{12} = 0.52$). An indirect causal effect exists also between *emotion recognition accuracy* and *action evaluation*, since *emotion recognition accuracy* impacts the *action evaluation* variable ($\beta_{13} = 0.19$) via the *competence expectation* dependent variable.

Consequence anticipation (η_2): In the structural model, each of the independent variables *emotion recognition accuracy* ($\lambda_{21} = 0.17$) and *emotional perspective taking* ($\lambda_{22} = 0.45$) exert positive effects on the *consequence anticipation* dependent variable. Overall, *consequence anticipation* thus is positively influenced most strongly by the independent variable *emotional perspective taking*.

Goal attainment (η_3): Further explanations are furnished for the independent variables *affective responsiveness* ($\lambda_{31} = 0.12$) and *emotional perspective taking* ($\lambda_{32} = 0.22$) on the dependent variable *goal attainment*. There exists a further indirect causal effect between the *emotional perspective taking* variables via *action evaluation* on *goal attainment* ($\beta_{33} = 0.14$).

Competence expectation (η_4): The influences of the independent variables *emotion recognition accuracy* ($\lambda_{41} = 0.10$), *emotional perspective taking* ($\lambda_{42} = 0.20$) and *affective understanding* ($\lambda_{43} = 0.27$) are predicated on the dependent variables *competence expectation*. The impact of the *affective responsiveness* independent variable here is especially pronounced on *competence expectation*.

The goodness criteria for evaluating the aggregate model furnish a very good overall model fit ($\chi^2 = 9.10$, $df = 7$, $p = 0.25$; CFI = 0.99; RMSEA = 0.05; SRMR = 0.003).

Discussion

Social competence is increasingly moving into the centre of the discussion in many publications as a key qualification (Klieme, Artelt, & Stanat, 2002) both for the school context and for occupational success. The subject of the present study was analyzing the relationship between core aspects of socially competent actions under consideration of social information processing theory with components of cognitive and emotional empathy capability.

First, our analyses confirm by means of correlations the fundamental reciprocal relationship of the dynamically interacting core components of *emotion recognition accuracy*, *emotional perspective taking* and of *affective responsiveness*. Second, the results reflected clear correlations between the three empathy variables and compiled social competence variables. We will briefly discuss these below against the background of the social information processing model:

- a) An elaborated action evaluation as performance measure for the youth in a social interaction is materially influenced in a positive manner by the capabilities for *emotion recognition accuracy* and *emotional perspective taking* as cognitive dimensions. These represent crucial prerequisites for effectively acting for another person's benefit or harm. If we follow the assumptions of Lerner and Arsenio (2000), then emotions regulate the retrieval of action alternatives in the same way, by antecedent encoding of social cue stimuli in mimicry, gesture, and body posture along with attribution of intentions to the interaction partner. The performance-related measure for adequate action evaluation demands a precise decoding of the interaction partner's affective state and hence understanding the thinking and feeling of the other in terms of a *theory of mind* of what led to the state (Sodian et al., 2012). The results suggest that, in successfully relating to people, the capacity for coordinating one's own views with those of the other person are just as vital as taking on the emotional perspectives of others – so that conflict can be resolved for both sides in a way that fosters or even preserves trust and closeness.
- b) Beyond these results, another interesting finding is that the action evaluation in a social interaction is increasingly sustained by the pupil's personal *competence expectation* resource. By way of an indirect causal effect, *competence expectation* as a self-evaluation measure even exerts a positive influence on *action evaluation*. Weinert (2001), with his influential expertise on the competence concept, already discusses it beyond cognitive disposition, and it finally also touches on the self-efficacy aspect after Bandura (1997). Thus, young people must be competent in taking the appropriate actions under stress and with persistence based on their own subjective convictions. (Bandura, 1997; Schwarzer & Jerusalem, 2002). Besides relying on the subjective belief in their own abilities in choosing and weighing a certain action, how competent the youths feel, think, and also behave in a specific social interaction also benefits from accurately reading the emotion of others and own capacity for emotional perspective taking.
- c) The scale of the interplay between *consequence anticipation* as a performance measure and of *emotional perspective taking* as cognitive empathy component is a finding equally worth discussing. That is because promoting a mature degree of differentiation of relevant, observable, emotional stimuli in middle to late adolescence progressively impacts logical thinking about complex social interactions. Accordingly, in cognitive terms, it means a person succeeds in more or less strongly grasping the emotional meaning of a situation, reflecting on the consequences of a decision to act for oneself and another, and devising solutions for conflicts. From the emotional standpoint, the person is capable to a degree of considering the emotional consequences of specific actions for himself or herself and for others or of empathizing with others (Keller & Becker, 2016).
- d) Also in evidence are positive correlations of the affective empathy component of *affective responsiveness* to the interrelated measures of *action evaluation* and *consequence anticipation* as performance measures and *competence expectation* as a self-assessment measure. At each stage of social information processing, the adolescent is thus subjected to involuntary physiological reactions and feelings in watching or listening to another person. Decety and Meyer (2008) assume that, depending on the type of individual evaluation, this can even lead to an emotional state of anxiety, personal distress or sympathy. The three social competence measures therefore require – in consideration of the empathy components – the youth's temporary capacity to identify with the person but, simultaneously, in becoming aware of the own emotional excitations and thoughts also to distance herself or himself from the other person in the interaction process (Decety & Meyer, 2008; Decety & Moriguchi, 2007). If the adolescent manages to understand the emotional state of the other person in the social or professional interaction, the probability increases of attaining goals chosen for herself or himself and the milieu in a more socially competent manner (Kanning, 2002).
- e) The present study also confirms that in a social interaction there are correlations of the affective empathy component of *affective responsiveness* and the cognitive empathy

component of *emotional perspective taking*. The same applies to the weighting of the respective *action evaluation* performance measures on appropriate assessment of *goal attainment*. Consequently, recognizing the emotional state between the own and another's emotions, understanding the other's emotional perspective in cognitive terms, and adequately interpreting both prior to implementing any action, play a decisive role in the youth's goal attainment. The selected potential reaction then is translated into specific verbal and motor behaviour. The youth monitors and possibly modifies the execution of the action by calibrating it to feedback from the environment (Ziv & Sorongon, 2011). In *social schemata and knowledge structures* stored in the *brain's control centre* for social-cognitive information processing, the goals therefore presumably are worked out relying on cognitive flexibility as an executive function of working memory, while also subjected to checking and rearranging desired action goals (Kubesch & Walk, 2009).

Significance for pedagogical practices

The systematically oriented capture of individual social competence components more precisely identifies possible areas of teaching practices that need upgrading. In this context, the question poses itself of how to design targeted pedagogical measures on the one hand and specify their contents on the other.

Timely promotion measures on the class level require stable implementation, practicability, and evaluation feasibility. Utilizing Mutzeck's (2007) five-step *OIDÜR approach* – (Orientierung (orientation) – Information – Demonstration – Übung (practice) and Rückmeldung (feedback) – Reflexion) (2007) makes a positive contribution by providing the basis of a training concept for acquiring social competence through class instruction. The approach adapts by modifying the microstructure of the individual steps, which makes them suitable for deploying targeted exercises and games. The five steps draw on different theories of learning and thereby make it possible to achieve maximum effectiveness. (Mutzeck, 2007). Embedding them in timely prescribed school settings would be just as feasible as recipient-appropriate adaptation of the contents to the cognitive performance levels of the pupils through a clearly structured parallel approach of individual sessions.

The findings of the present study, moreover, hint that the content of the support measures should be calibrated especially to the empathy components. As it were, the cognitive aspect of recognizing own and another's emotions as an upstream component of emotional perspective taking exerts varying degrees of influence on the measures of social competence. As a first step, using exercises and pretend conflicts, this calls for addressing in an effective manner the processing of facial emotional expression just as is done for verbal and behavioral expressions.

The cognitive empathy dimension *emotional perspective taking* mainly and reciprocally impacts the social competence measures. This suggests, as a second step, to especially foster understanding the emotional states of the interaction partners and anticipating motives in terms of a *theory of mind* (ToM) (Bischof-Köhler, 2011). However, the split between affective and cognitive empathy, for instance in autistic youths, poses a problem, due to the anomalous difficulty in understanding the inner processes of others (Baron-Cohen, 2001).

Affective responsiveness as automatic unconsciously-operating reactions of the affective empathy dimension navigates between own emotional experience and the perception and mimicking of the other person's emotional state (Decety & Lamm, 2006). Since this component exerts an effect on *goal attainment* and *competence expectation* and correlates with the other empathy components, in a third step, we need to reflect on whether it would be preferable to design pupil-appropriate exercises from the gestalt therapeutic realm, from imitative games, but also from role play elements. (Calley & Gerber, 2008; Pearson, Russ, & Cain Spannagel, 2008).

Limitations and further research

The analysed object imposes many a limitation on the results. First, the study focused exclusively on the correlation between empathy components and social competence measures. Their results say nothing about relationships with other factors such as self-efficacy conviction. In a follow-on study, in-depth analyses of positive self-efficacy beliefs would be beneficial, for they represent a key variable for a successful career start (Lent, Brown, & Hackett, 1994). Second, we have here a cross-sectional study that only lets us predict to a limited extent the changes over time in the individual independent variables. Third, the surveyed youths represent a selective sample, in which mostly regular school graduates with low to middle socioeconomic status are overrepresented. A comparison with results from pupils from secondary schools transitioning to higher education would furnish a novel study topic.

These results nevertheless furnish the basis for follow-up studies on sociocognitive concepts and shed new light on the more focused fostering of empathy components in the social interaction among young people transitioning from the regular school system to the world of work.

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