

Mind-mindedness and educational stance in a sample of primary school teachers

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Abstract

Mind-mindedness has been defined as the caregiver's ability to consider the children's mental states and refer to them in commenting behavior. The present study embedded mind-mindedness in the discourse about the quality of teacher-pupil relationship in primary school alongside other instruments that investigated the educational style in terms of authoritarian paradigm, methods, and control. The 169 Italian primary school teachers involved in this study completed, through an online survey platform: a description of one selected pupil (Mind-mindedness representational measure), *Adultcentrism Scale for Teachers*, *The Black Pedagogy Scale* (cf. Rutschky, 1977, 2015; Miller, 1980, 1983), and *Problems in School Questionnaire*. In general, descriptions of pupils provided by teachers showed a prevalence of mental attributes over behavioral ones. A higher percentage of mental contents in teachers' descriptions associated with a teaching style oriented to support pupils' autonomy. The agreement with Black Pedagogy methods associated instead with poorer descriptions. Moreover, a positive correlation was found between the report of higher diffusion of Black Pedagogy's practices nowadays, and the tendency to

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use more mental attributes (absolute frequency). For future research, it would be interesting to deepen the level of adult mind-mindedness in further educational contexts and in describing children of different ages, also through a qualitative methodology

Keywords: mind-mindedness, teacher attitudes, primary school, educational practices, educational style

Introduction

Mind-mindedness (MM) has been defined as the caregiver's ability to consider the children's mental states and properly refer to them in commenting behavior (Meins, 1997): parents, in commenting what they see, verbalize their representations of the child's thoughts and feelings that led to a certain behavior (Meins, 2013). In the course of development, parents' MM gives the children the opportunity to reflect on their own ideas and those of others, to understand that their desires and preferences are different from those of others, to anticipate the possible consequences of one's behavior on others, and to differentiate between what one wants and what others expect from him/her (Gagné et al., 2018). In this direction, a recent longitudinal study conducted by Giovanelli and colleagues (2020) identified a role of mothers' appropriate comments in determining the maturity level of symbolic play. Although this study (Giovanelli et al., 2020) involved young children (between 6 to 18 months), it contributes to underline the role of caregiver's MM as important factor in influencing different domains of children development, and in particular an inherently representational and relational activity such as the symbolic play.

MM could be one of the elements of the social context that also facilitates the development of cognitive functions, such as language and executive functions, which are crucial for the school curriculum (Meins et al., 2013). Furthermore, caregivers who consider the mental states of children are better able to recognize their cognitive potential and propose challenges that are appropriate to their level of development (Bernier et al., 2017). In other words, they know how to act on children's proximal development zone which is defined as the difference between a child's «actual developmental level» and the child's «potential development as determined through problem-solving under adult guidance or in collaboration with more capable peers» (Vygotsky, 1978, p. 86).

Educational contexts outside the family can also help to promote the expression and understanding of one's own and others' mental states through exposure to a metacognitive language that gives relevance to the child's intentionality and psychological aspects (Degotardi & Sweller, 2012).

When children enter educational contexts different from the familiar ones, they establish new important relationships, especially the one with the teacher (Castelli, 2019; Pianta, 2001). The aim of both teacher-student and parent-child relationships is to encourage the exploration of the world and to promote the acquisition of social skills (Davis, 2003). Emotional support is a central aspect of the quality of the child-teacher relationship: it consists in taking care of the pupils, respecting them, being eager to understand their feelings and points of view, and being reliable (Ruzek et al., 2016). Moreover, teachers' expectations and beliefs toward each student influence the children's perception of themselves and their way of acting in the classroom (Bosacki, 2014). Especially during primary school, children acquire important skills and develop a representation of themselves as students with beliefs, attitudes, and motivations (Pianta, 2001). The teacher represents «a window of opportunity» for the pupils (Pianta, 2001, p.21), since they play a key role in children's positive idea of the school, which is possible if pupils find a welcoming and caring environment in the classroom.

Nonetheless, compared to the richness of research concerning MM in parents, to the best of our knowledge there are still few studies that have investigated the role of MM in the quality of the relationship with professional educators. As other authors noticed (Ornaghi et al., 2020) constructs originally theorized in respect to family context, such as MM, can be studied in settings outer than the family thus representing a contribute to a new line of inquiry.

Mind-mindedness and authoritarian educational stance

Given the importance of the educational relationship for children's development and learning even beyond the first years of life, with the present work we aimed at contributing to this emerging line of research. We investigated the construct of MM in primary school teachers, exploring possible connections with teachers' perspectives about authoritarian aspects of the educational relationship, measured through the constructs of Adultcentrism, Black Pedagogy, and a controlling teaching style (*Problems in School Questionnaire*; Deci et al., 1981).

An adultcentric perspective is characterized by the tacit idea that children are incomplete, immature, and incompetent: essentially, lacking (Florio et al., 2020a; Furioso, 2000; Goode, 1986; Mackay, 1974; Petr,

2003). Therefore, high levels of Adultcentrism declined in a teacher-child relationship could create a relational context where the children's autonomy and competencies are not much considered and the relationship risks to conform as unilateral. Moreover, Adultcentrism appears strictly linked to the risk of putting into practice abusive educational practices aimed at maintaining discipline and obedience, which come under the concept of Black Pedagogy (Florio, 2018).

The term Black Pedagogy does not refer in any way to the education involving black students and teachers, nor pertains to the inclusion of black studies in schools' programs (Johnson et al., 2014; Pitre et al., 2008). It is the literal translation of *Schwarze Pädagogik* (Rutschky, 1977; 2015), the first use of this label for the concept was made by Miller (1980), who introduced also the alternative term "poisonous pedagogy" (Miller, 1983) for the same construct of educational practices characterized by the systematic use of power, violence, and intimidation, thus structuring them as physically and psychologically maltreating practices (for a more in-depth explanation of the construct please refer to Florio et al., 2020b). It is therefore particularly important to disambiguate the use of the term "black" in the present construct, maintained with the aim to adhere to the original concept that could be defined as a set of old-fashioned authoritarian educational practices that, nowadays, are considered harmful to the child (Florio, 2018).

Another level of analysis of the child-teacher relationship that may also have links with MM is the educational style. As observed in parenting style, authoritarian caregivers are cold and rejecting, but simultaneously they have high levels of demandingness and expectations (Coldren & Hively, 2009). As a consequence, relating with an authoritarian caregiver could influence negatively children's representation of themselves and their ability to succeed (Bosacki, 2014), narrowing the «a window of opportunity» represented by the teacher's emotional support (Ruzek et al., 2016), as well as a caring and welcoming environment (Pianta, 2001, p. 21). Consequently, this work represents an occasion to explore possible connections between MM and the teachers' tendencies to put into practice a controlling teaching style that does not account for children's own perspectives.

The association of the above presented constructs, despite the very recent developments in this research area, seems to be supported by the literature thanks to the presence of studies with maybe different specific focuses but analogous directions. Specifically, SmithNielsen and colleagues (2022) in their work used both representational and interactional measurement for MM, in the context of center-based childcare (children aged 0-2.9 years), following the hypothesis and the

evidence of previous literature that children's development was influenced also by the quality of interactions that children lived with their professional caregivers (SmithNielsen et al., 2022). As the authors underlined, this was particularly important when children came from at-risk situations and met professional caregivers capable to understand their needs and respond to them appropriately (SmithNielsen et al., 2022).

Moreover, some studies investigated MM in early childhood educators with differences in the age of participants, methodology, and aims. For instance, Degotardi and Sweller (2012) observed MM abilities in free-play interactions between educators and one selected child (aged between 9 and 20 months), they also collected the professional caregivers' description of the child while watching the video of the free-play session. The results of Degotardi and Sweller (2012) showed that in describing younger children, educators focus on perceptive, intentional, and emotional attributes, because these are relevant features of children's social play and behavior, whereas the descriptions of older children are influenced by children's attitude to express their mind through language and symbolic play. Moreover, the authors found that MM abilities are linked with the educators' sensitivity and stimulation in infant care and education (Degotardi & Sweller, 2012).

In another study (Colonnesi et al., 2017), MM has been investigated in interactions during structured play with three-year-old children, it was the first study that considered interactions with more than one child. Colonnesi and colleagues (2017) found that teachers' MM toward two children simultaneously (but not toward one child) is associated with the teacher's respect for autonomy and with the children's secure attachment. Differently from parents, professional educators mainly relate to a group of children; therefore, they must be able to interpret the behavioral and emotional signals of the group. Mind-mindedness abilities allow the professional caregiver to understand and respect children's perspectives and intentions (Colonnesi et al., 2017). The stimulation of children's autonomy by caregivers can have a positive effect on children's self-esteem and consequently on the quality of the relationship (Whipple et al., 2011). Mind-mindedness can therefore become an indicator of the quality of the relationship between professional caregivers and the group of children in educational contexts (Helmerhorst et al., 2019).

A recent work (Ornaghi et al., 2020) investigated the relationship between educators' MM and their emotional socialization style. The authors found that less frequent use of mind-related terms in educators' descriptions of children aged between two and three years was

associated with a dismissing emotion socialization style. Instead, those educators who consider children as individuals with independent beliefs, desires, and emotions, as well as believing in the importance of discussing emotion with children and guiding them in emotion regulation, present higher levels of coaching emotional style.

There were also studies that explored possible associations between professional caregivers' MM and children's Theory of Mind (ToM; Perner & Wimmer, 1985). Santelices and colleagues (2022) used the interactional measurement of MM for educators of pre-school aged children. They observed that there was a significant association between MM in educators and ToM abilities in children (Santelices et al., 2022).

All the studies presented until here investigated MM in the educational relationship with children in the first years of life. To the best of our knowledge, it was rare to find studies that have dealt with the role of teachers' MM in the education of older children so far. One of these, conducted by Valle and colleagues (2022) examined the possible influences of primary school teachers' MM on the children's mentalization skills. They found that the increase of physical comments by teachers in MM descriptions was associated with lower children's performances in both cognitive and affective ToM (Valle et al., 2022). This result could suggest, once more, how children's development and skills were strictly linked to the quality of experiences also with professional educators and how MM could be included as a relevant factor in this process (Valle et al., 2022).

Aims of the Study

The first goal (a) is to explore the MM construct in primary school-age teachers, using a representational measure, as close as possible to the traditional protocols elaborated for parents (Meins & Fernyhough, 2015). MM is a relational construct that assumes specific characteristics within different relationships (Illingworth et al., 2016), as seen above, the teacher-student relationship in primary school played a crucial role (Pianta, 2001), not only in learning process, but also in children's emotional and social development (Davis, 2003; Ruzek et al., 2016). In MM studies where adults describe other adults (Barreto et al., 2016), was observed that there was a tendency to use more mental attributes in describing meaningful people than in describing celebrities. For this reason, it could be possible that also in primary school teachers MM could represent an indicator of the quality of teacher-student relationship.

The second aim (b) is to investigate possible connections between teachers' MM and their level of agreement with an adultcentric perspective. What is expected is that teachers who consider their pupils as subjects with fewer competencies and dependent on adults will reflect this idea in their descriptions, for instance producing poor descriptions with few references to children's own mental states.

The third purpose (c) of this work is to explore the presence of connections between MM and the Black Pedagogy construct. In a similar way to what is expected for Adultcentrism, it is supposed that teachers who agree with this type of educational values, will provide peculiar descriptions in terms of richness of contents and presence of mental attributes. Nonetheless, we presume that possible connections will be more evident with this construct than with Adultcentrism, because previous studies (Florio et al., 2022) support the idea that a certain level of Adultcentrism is physiological, in the sense that it reflects the adult's natural point of view, which is not detrimental by itself.

A final objective (d) is to assess if there is any relationship between a low level of MM and a controlling teaching style, which should be less oriented to take into account the perspective of children. The instrument chosen for this aim is the *Problems in School Questionnaire* (PIS; Deci et al., 1981). The hypothesis connected to this objective is that MM descriptions will be different if teachers are more inclined towards a style that is supportive of pupils' autonomy rather than a controlling teaching style. Indeed, as highlighted by Degotardi & Sweller (2012), the level of MM in professional educators could play a role in the quality of adult-child interactions, nurturing their supportive and sensitive attitude toward children. Conversely, it is supposed that descriptions provided by teachers that adopt a controlling teaching style may be similar to the descriptions of those participants who show high agreement with an adultcentric perspective and/or educational practices or values typical of Black Pedagogy.

Methods

Measures

Mind-Mindedness

The first studies on MM (Meins, 1997) involved children in the first years of life and the construct was usually investigated through an interactional measurement that evaluates the appropriateness of caregiver comments during a presence caregiver-child interaction (Meins & Fernyhough, 2015). In the interactional measurement of MM the

comments on child behavior may be classified as attuned or non-attuned. A comment is classified as attuned if the researcher agrees with the interpretation of the mental state of the child given by the caregiver, if it represents a connection with similar events in the past or future experience, or even if the verbalization allows clarifying how to proceed after a break in the interaction (Meins & Fernyhough, 2015). Instead, the occurrence of non-attuned comments (i.e., the lack of MM) entails that the child is exposed to fragmentary and non-cooperative interactions (Meins, 2013). On the other hand, measuring the ability of MM in caregivers of children that are older than 12 months of age requires to adopt a brief interview as a representational measure (Meins et al., 1998; Meins et al., 2014; Meins & Fernyhough, 2015) which mainly consists of the question “Can you describe [name of the child]?”. Since we investigated MM in a relatively wide sample of teachers, we had to adapt the original instructions to our situation of online administration through a questionnaire. Because there was no face-to-face interaction between participant teachers and the researcher, we had to include more information in our question. Our main concern was to avoid that teachers could be influenced by their own preferences in choosing which pupil to describe. Therefore, we elaborated the following question:

Please describe in your own words and anonymously, the pupil that you find at number 10 of your class register, referring to the class of younger children in which you teach and to the first section. There is no right or wrong answer to this question - please try to answer as openly as possible, you can write as much as you like.

For example, if you teach in 3rd and 4th grade class, think of the pupil at number 10 of 3rd grade’s register (section A). If you teach in 2nd and 5th grade, think of the pupil at number 10 of the register of 2nd - A class, and so on. It is not necessary to put the name of the pupil or to make explicit the class of attendance. If there are not different class sections, choose the number 10 in the class of younger children. If it is a classroom with groups of mixed-age pupils, choose the number 10 of the list. If there are less than 10 children choose the register number closest to 10.

In the representational measurement of MM the classification of attuned or non-attuned comments is not applicable. Therefore, according to the coding manual (Meins & Fernyhough, 2015), teachers’ descriptions were codified by dividing the text into discrete attributes (single words or brief sentence segments), subsequently classified on the basis of six categories: mental, behavioral, physical, self-referential, relational, and general. Mental attributes refer to knowledge, emotions, desires, and preferences (e.g., intelligent, happy, he/she would like to be a scientist, he/she likes reading, etc.); behavioral contents concern

games, activities, and interactions with others on the behavioral level (e.g., he/she likes to play football, is friendly, is aggressive, etc.); physical attributes include references to physical appearance, age, and position in the family; self-referential contents are directed more toward themselves than toward those who are being described (e.g., makes me laugh, makes me nervous, etc.); relational comments regard the relationship rather than the individuals involved (e.g., we are in tune, we are really different); finally, the general category includes all comments that do not fit in other categories (e.g., coming from abroad, non-specific judgments, etc.). The MM index was calculated as a percentage of mental attributes (%Mind) and was treated as a continuous scale (0.00-1.00). For the purposes of the present work the total number of attributes in a description (Tot), the number of mental attributes (N-Mind) and the number of behavioral attributes (N-Behavior) have been taken also into consideration.

Authoritarian educational stance

- *Adultcentrism Scale for Teachers* (ADT; Florio et al., 2022) is composed by 9 items with a 4-point Likert scale of agreement as a response set. High scores indicate that teachers tend to consider their pupils as disempowered and without responsibility, towards an idea of the child as empty receptacle in need of being provided by adults with social and cultural values. The current version of the instrument has been validated on Italian teachers' sample (Florio et al., 2022) after a first validation study of the original scale (Florio et al., 2020a) with a sample of Italian university students and parents.
- *The Black Pedagogy Scale* (Florio et al., 2020b) concerning the detection of Black Pedagogy construct (viz., Black Pedagogy Observation section) is constituted of 24 items with a 4-point Likert agreement scale. The items load on the three factors: *Values of Black Pedagogy* (high score: agreement with educational goals such as subordination to authority, tidiness, gratitude, honesty, obedience, diligence, humility, and chastity), *Education of children over time* (high score: nostalgic attitude towards educational practices used in the past because considered more effective and useful), and *Methods of Black Pedagogy* (high score: agreement with detrimental disciplinary methods such as pedagogical beating, cautionary tales, providing false information, humiliating, treating the child coldly, etc.). The instrument includes also a first item of temporal collocation (not used in the present study) and a further section regarding participants' estimations of diffusion of Black Pedagogy methods in the past and nowadays. This instrument has been validated on Italian

teachers' sample (Florio et al., 2022), after a first validation study (Florio et al., 2020b) with a sample of Italian university students and parents.

- *Problems in School Questionnaire* (PIS; Deci et al., 1981), evaluates whether the teacher tends to adopt a controlling teaching style or a style that supports the student's autonomy. This instrument has been validated in Italy (Alivernini et al., 2012) and is constituted by two situations depicting two possible problematic events occurring in classroom daily life, each of which is followed by 10 items representing several different possible reactions to the proposed situation. Respondents are asked to indicate on a 5-point Likert response scale how much likely they would react in the manner indicated by the item (1 = not at all likely, 2 = a little likely, 3 = quite likely, 4 = very likely, 5 = extremely likely). Part of the reactions listed as items reflects a more controlling style in responding to the presented situation, whereas the remaining ones denote the teacher's reactions that are supportive of autonomy. The sum of scores on items related to the two different styles provides total scores of the *Controlling teaching style and Autonomy supportive teaching style* scales.

Participants and procedures

All measures presented were administered in the Italian language to a sample of Italian teachers working in classes from second to fifth grade of primary schools. Inclusion criteria were being teachers working in these classrooms in the schools where the head teacher consented to participate in the research. The first-grade teachers were not included because the teacher-student relationship would have been at a too early stage of its construction. Sample recruitment was done in the province of Bergamo and was preceded by the presentation of research aims and procedures to the head teachers of the schools on the territory. Participant teachers have been provided with the link to an online survey platform and received clear information about the objectives of the research, and about their rights as participants – including the guarantee of anonymity and the possibility to drop out from the study at any moment. All participants were treated in accordance with the ethical guidelines for research provided by the Declaration of Helsinki (World Medical Association, 2013), American Psychological Association (APA, 2017), and by Italian Psychological Association (AIP, 2022). They received researchers' contacts and further information if needed. The expression of informed consent was a prerequisite to proceeding in filling out the questionnaire.

The age range of the sample ($N = 169$) was from 26 to 63 years ($M = 47.8$, $SD = 8.5$). The continuous scale of age has been collapsed into four age groups: under 35 years (8.3%), from 35 to 44 years (21.9%), from 45 to 54 years (45.6%), and 55 to 65 years (24.3%). The mean of teaching years was 22.2 ($SD = 11.2$), and hours of teaching per week resulted in a mean of 20.6 ($SD = 1.1$). Teachers employed in a curricular role represented 88.2% of the sample and 11.8% was constituted by special needs teaching assistants. The sample resulted mainly composed of female teachers (98.8% females and 1.2% males). As regards the educational qualification the sample is distributed as follows: 68.6% percent held an upper secondary school qualification, 6.5% held a «University Diploma» (qualification established by Law 341/90, no longer in force), 2.4% a Bachelor's degree, 19.5% a Master's degree and, lastly, 3% held a post-Master's specialization qualification. Most of the participants (77.5%) were involved in a sentimental relationship (i.e., stable relationship, cohabitation, married, or remarried) and the 22.5% at the moment of research were not involved in a sentimental relationship (i.e., single, separated, divorced or widow). Furthermore, 24.7% of participants declared that they do not have any child, whereas 75.3% of respondents resulted to be a parent.

Design and Data Analysis

Data analyses were performed with Jamovi software (Version 1.1.9) and consisted of descriptive analyses of the sample's characteristics and the exploration of responses' distribution for each instrument included in the battery of questionnaires. The absence of important violations from normality was assessed considering that values of skewness and kurtosis between -1 and +1 are considered acceptable (Muthén & Kaplan, 1985).

For the calculation of MM's indexes, descriptions were coded by a first encoder blind to all other instruments and to the aims of the research. A second encoder coded a randomly selected 30.8% of descriptions, inter-rater agreement for the mental, behavioral, physical, self-referential, relational, and general categories was $\kappa = .82$ (McHugh, 2012).

For all measures included in this work, differences in scores between multiple subgroups of participants (more than two subgroups) have been investigated through one-way ANOVAs, previously testing for assumptions of normality, linearity, univariate and multivariate outliers, homogeneity of variance-covariance matrices, and multicollinearity. When the mean comparison between only two groups was of interest, independent-sample t-tests have been conducted. Specifically, for the comparison between curricular and special needs teaching assistants the

Mann-Whitney non-parametric test was done, after a random extraction of a number of curricular teachers equal to the group of special needs teaching assistants.

Possible correlations between the indexes derived from the descriptions provided in MM question and the scores on the other measures have been investigated. The intensity of Pearson product-moment correlations has been interpreted according to Cohen's guidelines (1988). The effect size was calculated through Cohen's *d* index.

Results

Firstly, descriptive analyses of MM measure are presented. As can be seen in Table 1, the average percentage of mental attributes (in respect to the total number of descriptive contents) is 54% and the mean of mental attributes appearance is significantly higher than the one of behavioral attributes: $t(146) = 2.941, p = .004, d = .03$.

Tab. 1 - *Descriptive Analysis of Mind-Mindedness Indexes*

MM	Min	Max	<i>M</i>	<i>SD</i>	<i>SEM</i>	<i>sk</i>	<i>ku</i>
Tot	1	24	9.17	4.6	.35	.693	.639
N-Mind	1	18	5.04	3.12	.243	.949	1.245
N-Behavior	1	14	4.23	2.32	.19	1.031	1.681
%Mind	.00	1	.54	.24	.018	.149	-.195

Note. Tot = total number of attributes present in a description. N-Mind = number of mental attributes. N-Behavior = number of behavioral attributes. %Mind = percentage of mental attributes on the total number of attributions.

The descriptive analyses conducted on the responses to the other measures included in the research (viz., *Adultcentrism Scale for Teachers*, *Black Pedagogy Scale*, and *Problems in School Questionnaire*) are presented in Table 2.

Tab. 2 - *Adultcentrism Scale for Teachers (ADT), Black Pedagogy (BP) and Problems in School Questionnaire (PIS): Minimum and Maximum Possible Scores, Compared with Mean Scores, Characteristics of Responses' Distribution, and Mean Responses on the Likert Scale of each Instrument*

Measure	Min	Max	<i>M</i>	<i>SD</i>	<i>SEM</i>	<i>sk</i>	<i>ku</i>	α	Inter-item correlation range	Mean response
ADT	11	28	19.14	2.79	.325	.13	.44	.74	.36	2.13
BPO	24	96	55.8	8.47	.698	.01	-.30	.88	.96	2.32
BP-F1	11	44	29.7	5.24	.427	-.15	-.14	.86	.56	2.7
BP-F2	5	20	14	2.43	.195	.06	.01	.72	.3	2.79
BP-F3	7	28	9.9	2.19	.175	.67	-.22	.59	.45	1.42
BP-P	12	48	34.9	6.63	.54	-.24	-.19	.9	.45	2.91
BP-N	12	48	21.4	4.55	.364	.08	-.36	.82	.57	1.78
PIS-A	10	50	21.5	6.29	.502	.31	-.32	.89	.6	2.15
PIS-C	10	50	38.6	6.78	.543	-.33	.09	.85	.55	3.86

Note. ADT = Adultcentrism Scale for Teachers. BPO = Black Pedagogy Observation. BP-F1 = Factor 1, Values of Black Pedagogy. BP-F2 = Factor 2, Education of children over time. BP-F3 = Factor 3, Methods of Black Pedagogy. BP-P = Black Pedagogy diffusion in Past. BP-N = Black Pedagogy diffusion Nowadays. PIS-A = Problems In School Questionnaire - Autonomy: subscale measuring the level of a teaching style that is supportive of students' autonomy. PIS-C = Problems In School Questionnaire - Control: subscale measuring the level of a controlling teaching style. α = Cronbach's α

According to our ANOVAs, no differences emerged in reference both to MM indexes and to other measures in the subgroups based on age, educational qualification, territorial area, and involvement in a sentimental relationship. Similarly, the non-parametric comparison between curricular ($Mdn = 0.59$) and special needs teaching assistants ($Mdn = 0.48$) on MM (%Mind index) showed no significant differences, $U(N_{curricular} = 20, N_{assistants} = 20) = 135, p = .08$. A series of independent samples t-test was performed to compare MM indexes between teachers that are also parents and those who are not. Concerning the %Mind index, the scores of teachers that are parents ($M = .55, SD = .24$) resulted not significantly different from those of teachers who do not have own children ($M = .5, SD = .22$): $t(160) = 1.153, p = .251, d = .22$. A significant difference was found if comparing the total number of attributions in a description (Tot) produced by those who have children

($M = 9.5$, $SD = 4.8$) and those who do not ($M = 8.1$, $SD = 3.3$). Since Levene's test for equality of variance resulted with $p < .05$, equal variances were not assumed and the resulting t-test was statistically significant: $t(95.98) = 2.108$, $p = .038$, $d = .34$. The N-Mind index was also investigated in the comparison between the same subgroups: contents produced by those who have children ($M = 5.5$, $SD = 3.3$) resulted significantly more frequent in respect to the descriptions of teachers that are not parents ($M = 3.9$, $SD = 2.2$). After assessing that Levene's test for equality of variance was $p < .05$, equal variances were not assumed and the difference resulted statistically significant: $t(100.88) = 3.486$, $p = .001$, $d = .57$. It is also important to underline that no significant difference was found if comparing N-Behavior index between the same subgroups.

The *Adultcentrism Scale for Teachers* showed no correlation with all the MM indexes, whereas the other measurements have shown some significative results (Table 3).

Tab. 3 - Summary of Pearson Product-Moment Correlations Between MM, Other Measures and Continuous Descriptive Analysis

Scale or subscale	Tot	N-Mind	N-Behavior	%Mind
ADT	-.145	-.011	-.138	.100
BPO	-.193*	-.086	-.184*	.078
BP - F1	-.192*	-.114	-.152	.064
BP - F2	-.041	.042	-.078	.063
BP - F3	-.239**	-.101	-.239**	.128
BP-P	.096	.027	.111	-.124
BP-N	.202*	.169*	.113	.003
PIS-A	.054	.223**	-.143	.238**
PIS-C	-.137	.025	-.278**	.166*
Age	.084	.068	.075	.016
Years of teaching	.117	.119	.042	.065
Hours of teaching per week	-.063	-.047	.009	.126

Note. ADT = Adultcentrism Scale for Teachers. BPO = Black Pedagogy Observation. BP-F1 = Factor 1, Values of Black Pedagogy. BP-F2 = Factor 2, Education of children over time. BP-F3 = Factor 3, Methods of Black Pedagogy. BP-P = Black Pedagogy diffusion in Past. BP-N = Black Pedagogy diffusion Nowadays. PIS-A =

Problems In School Questionnaire - Autonomy: subscale measuring the level of a teaching style that is supportive of students' autonomy. PIS-C = Problems In School Questionnaire - Control: subscale measuring the level of a controlling teaching style. Tot = total number of attributes present in a description. N-Mind = number of mental attributes. N-Behavior = number of behavioral attributes. %Mind = percentage of mental attributes on the total number of attributions.
* $p < .05$. ** $p < .01$.

No significant correlations have been found between %Mind, sample descriptive analysis (age, years of teaching, etc.) and Black Pedagogy Scale. Positive correlations emerged in reference to both the PIS subscale measuring the level of a controlling teaching style ($r = .17$, $p = .04$), and the PIS subscale measuring the level of a teaching style that is supportive of students' autonomy ($r = .24$, $p = .003$). This result suggests that a teaching style oriented to control the student through an authoritarian attitude relates less strongly with a greater %Mind in pupil's description, suggesting that a greater propensity to describe the pupil with mental attributes is more strongly associated with a teaching style that focuses on supporting the pupil's autonomous skills. Another interesting result is represented by the fact that the total number of attributions produced (Tot) correlates negatively with the total score of Black Pedagogy ($r = -.19$, $p = .019$): the greater is the agreement with this construct, the lower is the richness of the descriptions in general (with no distinction between mental or behavioral content). This is particularly true for BP third factor "Black Pedagogy Methods" ($r = -.24$, $p = .003$), which indicates that the more participants agree with the maltreating educational methods of Black Pedagogy, the lower it is the richness of their descriptions of pupils. Considering the number of mental attributes (N-Mind) present in a description, it emerged that the more participants believe that Black Pedagogy methods are diffused nowadays, the more are the N-Mind contents produced ($r = .17$, $p = .04$).

Discussion

To the best of our current knowledge, this is one of the first studies (cfr. Valle et al., 2022) exploring the level of MM in a sample of primary school teachers. For this reason, this could be considered a pilot study because of the necessary adaptation of MM representational measure and also for the aims to highlight possible connections between the pupils' image in the eyes of teachers' and their educational stance.

We found the positive result of a general prevalence of mental attributes over behavioral ones in the answers of our respondents (objective a). Such level of MM in teachers' descriptions, besides

representing a personal characteristic, may also be due by the aims of their profession, which are largely associated with cognitive functions and mental activities, and which rely upon the educational relationship, in the integration of roles and functions that teachers perform in the classroom (Pianta, 2001). Even Santelices et al. (2022) discussing the association between educators' MM and children's ToM abilities, suggested that the educational level and the role of professional caregivers provided knowledge and skills that facilitate understanding and helping children (Santelices et al., 2022). Nonetheless, in our sample age, years of teaching and hours of teaching per week did not show significant associations with MM construct. If the idea that this kind of professional role may in part facilitate the use of higher levels of MM (%Mind) cannot be clearly supported by our results, the fact of being a parent seemed to be a condition positively associated to the richness of descriptions (Tot) and to a higher use of mental attributes (N-Mind). This result necessarily needs to be further investigated through targeted research, for instance, in the context of research about the MM and the closeness of the relationship (Meins et al., 2014). Though, we can advance a few reflections about this outcome: firstly, when children and teachers meet at school each brings with them emotions, knowledge, and experiences outside the school setting, which can also have influences on what is experienced in the classroom (Pianta, 2001). It could be hypothesized that the closeness experienced in parent-child relationship (Meins et al., 2014) somehow provides occasions, words and situations in the daily routine that may promote the adult's tendency to consider mental states (N-Mind) of children, indeed the same difference was not found in relation to N-Behavior index. Secondly, more simply, the fact that children are also experienced in the role of son/daughter may expand the range of well-known terms and situations involving children's mental states. It is recalled that we are referring about the N-Mind index – the absolute frequency of mental attributes –, not the %Mind index, which would represent the level of MM shown by the respondent. However, there are certainly also other situations, experiences and expertise that teacher who do not have own children may bring in the relationship to relate with their pupils with closeness and responsivity. Indeed, as seen previously, there is a general prevalence of mental content over the behavioral ones in this sample of teachers, namely a good level of MM. There is another, and last, consideration that leads us to be cautious in considering the differences in these two subgroups of parents and non-parents: as already explained above, MM is a construct theorized in relation to the family context and parents, starting with studies on maternal MM. Perhaps there is some aspect of the construct or of the

coding guidelines which, being conceived and calibrated on parents, favors the emergence of this difference in the two subgroups? In this case the matter would be related to characteristics of the measure and not to an actual difference in the subgroups.

Regarding the possible associations between MM and the other constructs considered in this study, adultcentric perspective appears different from the teachers' point of view emerging from *The Black Pedagogy Scale and Problems in School Questionnaire*. The adultcentric paradigm of thought does not seem to influence in any way the descriptions that teachers provide of their pupils, and it does not lead to a significant impoverishment of descriptions (objective b). These results could depend on the nature of the construct of Adultcentrism, which is a perspective often naturally assumed by adults (Florio et al., 2022) with the very best intentions toward children (Florio, 2018). Moreover, an adultcentric vision represents a more conceptual and theoretical level that could allow to bring out a more general point of view, than the particular description of a specific pupil. Meanwhile, the other two instruments, thanks to their stronger link with applicative and behavioral implications, could facilitate the association with the daily school experience and the individual pupils. Indeed, an educational vision that results in agreement with the educational methods of Black Pedagogy (objective c), seems to be associated with teachers that produce poorer descriptions, with no distinction for the contents' category. Nonetheless, same kind of correlations emerged in reference to N-Behavior index ($r = -.18, p < .05$), as if agreeing with Black Pedagogy construct associates either with lower observation or lower salience given to the explicit behavior of the pupil. On the other hand, teachers who have the sensitivity to recognize the persistence in our schools of practices and values of Black Pedagogy, are also the ones that tend to use more mental attributes (N-Mind) in descriptions. Result concerning the PIS Questionnaire (objective d) shows that the greater propensity to describe the pupil with mental attributes is more strongly associated with a teaching style that is not controlling and that focuses on supporting the pupil's autonomous skills.

The subscale BP-F3 (Methods of Black Pedagogy) and PIS-C (controlling teaching style) both show a negative correlation with the number of behavioral attributes in the descriptions (N-Behavior), respectively $r = -.24$ and $r = -.28$ ($p < .01$). This result suggests that the higher is the agreement with the formers, the lower is the productivity in terms of behavioral attributes present in descriptions, or viceversa, since we are aware that this kind of analysis does not provide the evidence of a causal effect. Whatever the causal direction is, it is possible to observe

that ignoring the specific behavioral attributes of a child, thus producing a scarcer description in general, may not be due only to personal characteristics of verbosity level, since it is consistent with an authoritarian educational stance in which the child is not truly seen, rather is controlled, educated, and “formed”.

Limitations of the study

In order to reach an adequate number of participants, we had to sacrifice face-to-face interaction and opt for an online administration with related changes to the original question. However, a previous study by Meins et al. (2014) used different modes measurements, including online, and results showed the absence of influences on scores, given by the administration form. Our first experience with this formulation of MM representational measure has been positive: no participants avoided responding to this question. The verbosity characterizing our reformulation of the question commonly used in studies that investigated the representational MM (Meins et al., 2014), was compensated by the clarity of the instructions provided, considered necessary given the absence of direct interaction with the researcher. Teachers reported no doubts in answering, all responses were pertinent, and no case was unsuitable for coding. Nevertheless, not all the outcomes perfectly matched our expectations, and some possible reasons could be the following: firstly, the fact that teachers do not describe their own child and have the role of caregivers for a group of children (Colonnesi et al., 2017). Secondly, in primary school, the type of care and teacher-student relationship is different from the kindergarten, where the majority of other studies concerning teachers’ MM took place (Degotardi & Sweller, 2012; Colonnesi et al., 2017; Helmerhorst et al., 2019; Ornaghi et al., 2020; Santelices et al., 2022). Furthermore, our sample included both curricular and special needs assistant teachers, but this second group was undersized to allow parametric comparisons to explore possible differences in the representations and descriptions provided by teachers who assume these two different roles.

Finally, we acknowledge that the choice to focus on an authoritarian and controlling teaching style may have represented a limit, albeit based on a justified research interest to engage in dialogue the new instruments for Adultcentrism and Black Pedagogy with such a relevant and consolidated construct as MM.

Future Research Lines

Previous studies (Florio, 2018; Florio et al., 2020b) on the diffusion nowadays of Black Pedagogy methods revealed that despite the decrease in physical disciplinary practices, other methods such as frightening, providing false information, blackmailing, etc. are still considered in use by participants. For this reason, it would be interesting to investigate further if there are any connections between the teachers' mentalization abilities, the evaluation of nowadays diffusion of Black Pedagogy methods on the one side, and the tendency to use mental attributes in descriptions of pupils. This possibility could open an additional line of research-intervention by considering MM and mentalization abilities as a part of a new training tool for teachers, with the objectives to enrich and deepening their descriptions of pupils, giving relevance to all the features of each child and especially those with reference to mental contents, thus avoiding the risk of the application of a rigid and general image of the child. The work of Larkin et al. (2019) through the BabyMind app combined with face-to-face psychoeducational sessions, showed that MM can be facilitated in mothers. It may be possible to implement a comparable instrument for teachers, with the necessary adaptations to the peculiarities of the teacher-student relationship, also subjecting such treatment to efficacy studies.

Moreover, if teachers have more space and occasions to imagine pupil's mental content, they may be more inclined to rely on pupils' abilities and to work in the direction of supporting their autonomy, an attitude that may be crucial for an educational development that encourages the growth of students also in their emotional and social aspects. In this direction could be interesting also deepen the possible differences between curricular and special needs teaching assistants. The higher proximity and opportunity to relate with an individual pupil experienced by special needs assistant teachers could influence their tendency to use mental attributes when describing the pupil. Future studies could include homogeneous samples of curricular teachers and special needs teaching assistants even combining MM with measures of the quality of teacher-student relationship in general, such as the Student-Teacher Relationship Scale (STRS; Pianta, 1994, 2001; Pianta et al., 1995; Pianta & Nimetz, 1991; Pianta & Steinberg, 1992).

Another opportunity could be also represented by a focused exploration of the construct of mind-mindedness in professional educators in relation to pupils' specific features for instance comparing students of different ages, investigating the possible influence of pupils' gender or collecting information about some abilities and skills of

children. In this direction could be useful combining qualitative and quantitative methods, for example including Theory of Mind (ToM; Perner & Wimmer, 1985) measures, to evaluate which construct is more suitable for research involving samples of professional educators. In this respect, it would be also useful to design future research on the appropriateness of MM measurements for teachers and professional educators in general: once established if specific measures (qualitative or quantitative) of MM are needed or not, it will be possible to work further considering older children's groups, such adolescents, and subsequently open the opportunity to investigate MM longitudinally. For instance, a focus could be to explore how the teacher's image of a pupil evolves during the school years. It would also be interesting to compare teachers' and parents' descriptions of the same child, in order to clarify the role of professional features in determining the level of MM.

Conclusion

The level of MM (%Mind) in our sample did not prove to be particularly informative if connected with the measures related to an authoritarian educational stance. Nonetheless, the analyses on the other indexes of MM highlighted interesting subtleties, such as that a lower production of contents in teachers' descriptions of their pupils (Tot), is associated with constructs that divert from an educational stance capable of promoting children's well-being. Therefore, future studies delving further this line of inquiry and possible interventions oriented at facilitating MM could be significant in increasing the teachers' awareness of representations that they have of their pupils and the appropriateness with which they respond to their pupils' needs, helping to move away even more from authoritarian educational values or practices.

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