

MENTALIZATION, EDUCATIONAL STYLE AND LEARNING

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Abstract

The term Theory of Mind (ToM) defines the ability of understanding thoughts, emotions and desires of others. Precursors of ToM are Mentalization and Reflexive Functions experienced in the relationship with the figure of primary care. We can describe the Mentalization as a combination of self-reflective and interpersonal components. The Reflexive Function (RF) consists in the mental ability to manage the proper and the other ones behavior. In this way, children could respond not only to the others' behavior but also to their feelings, beliefs and expectations. In addition, an essential aspect is the educational styles to which they are exposed from the early experiences. It consists in two aspects: demandingness (requesting discipline from children) and responsiveness (emotional support). The first dimension includes the demands of parents regarding the observance of the rules. The second dimension includes the responsiveness of parents in child development by fostering his self-esteem, the perception of an individual identity and the self-regulation and the awareness of his abilities. On the basis of these two dimensions, we can identify four educational styles: authoritative, authoritarian, permissive and disinterested. It has been highlighted that the authoritative parenting style is the one that allows a balanced growth of children because there is a balance between: demandingness and responsiveness. We examined 30 teachers of primary school with their own class composed by 20 students. In total we had 600 pupils. In order to assess the teachers' level of mentalization we administered every teacher with RFQ_8 test after 4 months of school. After, we investigate children academic achievement with BVSCO-2, Test MT 3 Clinic and Test AC-MT 6-11. We found that a good level of mentalization, expressed in term of certain scale of RFQ_8 had significance influence of learning skills measured in terms of errors and in terms of time. Our results show a correlation between mentalization skills measured in teachers and student learning in terms of reading, writing and arithmetic skills. The aim of this study is about how a good level of teacher mentalization could be positively related to children's learning.

Keywords: *Theory of Mind, Mentalization, educational styles, learning.*

1. Introduction

Theory of Mind is the ability to impute mental states to the self e to the others as a way of making sense and predicting behavior (Premack & Woodruff, 1978). These abilities are not innate but they begin at the development of the child, due to an healthy interaction with the primary attachment figures. This interaction allows children to be able to represent not only their own mental states but also the other ones. ToM is essentially focused on social aspects because it allows to understand the behavior of others, even if it is not directly explained. This ability leads to the possibility of predicting the behavior of the people we observe. Precursors of ToM are Mentalization and Reflexive Functions experienced in the relationship with the figure of primary care. We can describe the Mentalization as a combination of self-reflective and interpersonal components which provides the ability to reflect and understand their own and the other ones mental and emotional states. The development of this ability leads to recognize actions as a result of mental states. Attachment is defined as an innate behavioral system that "predisposes children to show attachment behaviors [...] that serve to increase closeness to the caregiver, particularly in times of distress" (Jedrychowski et al., 2012). The Parental Reflective Function refers to the ability of the caregiver to reflect on their own internal mental experiences and those of the child (mentalization). This ability is important for the development of emotional regulation, the development of the agency, and a secure attachment relationship. The reflective functioning of parents (PRF), or mentalization of parents, is defined as the ability of the parent to reflect on the ongoing psychological processes in the child and

himself as a parent (Borelli et al., 2017). Therefore, PRF allows the parent to "decode" the child's behavior, linking it to internal states, and thus provides the parent with a greater understanding of the child's needs (Borelli et al., 2017). PRF is believed to play a role in parental sensitivity (Ensink et al., 2017) and in important aspects of child development, such as the regulation of emotions and the development of the child's reflexive abilities, as well as the child's behavioural problems (Rostad & Whitaker, 2016; Senehi et al., 2018). Weaknesses in PRF typically lead to problems in the proper "reading" of the child's mind, which, in turn, adversely affect the quality of parental caring behavior (Katznelson, 2014; Camoirano, 2017). Reflexive functions can manifest in hypermentalization or hypermentalization that will affect both the parent's educational style and the attachment relationship. Parental involvement practices are initiated by parents and they could be different depending on parents. This goal can be achieved by parents using attitudes and behaviors that we can imagine along a continuum, at an extreme of which we find the affective coldness and the rigid imposition of rules, to the other affectivity and autonomy albeit conditioned by clear and congruent rules. These poles may correspond to two dimensions: one based on making demands and exercising control in a way that does not take into account the characteristics and needs of the child, The other is characterized by an education based on a positive attitude towards the child, which takes into account his individuality and needs. From these dimensions have been outlined four educational styles (Abdul Gafor & Kurukkan, 2014): 1) Permissive - forgiving: the affectivity of the parents is not accompanied by the ability to set rules and behavioral limits, therefore few requests are addressed to the child. In this style we find a fall in requesting function and an excess in the reflexive function; 2) Permissive - indifferent: the disinterest and the poor involvement of parents in the life of the child are the main characteristics. The son is basically left to himself, without guidance and emotional restraint, master of a freedom that can cause a state of confusion. In this style we find a fall in both the reflexive function and the requesting function; 3) Authoritarian: parents impose rules without motivating them and not contemplating the possibility of questioning them, they therefore expect the child a total and uncritical adherence to their desires; transgression of the rules involves immediate punishment. In this style we find a fall in reflexive function and an excess in the re-questing function.; 4) Authoritative: parents who follow this educational model, in addition to expressing a sincere interest in the life of the child and strengthening his autonomy, are affectionate, sensitive to his needs and his requests. In this style we find a balance in the reflexive function and in the required function. At the same time, they are able to exercise careful and respectful control over their lives and behaviour, impose limits and rules, clarify their meaning and be willing to discuss their validity. It is understandable that this is the most positive educational style, as it facilitates the development of autonomy and self-confidence, social relations and a sense of responsibility.

The main goal of our research is to explore how a good level of teachers' mentalization could affect children' educational school achievements.

2. Methods

In this study, we examined 30 teachers of primary school with their own class composed by 20 students. In total we had 600 pupils. All participants were recruited from 3 primary schools in the area of Rome (Italy). Therefore, the inclusion criteria were as follows: (a) belonging to the same class level (third elementary grade), (b) students with no medical or psychological diagnosis; (c) a IQ between 95 and 105 assessed through the WISC-IV (Wechsler, 2003); (d) medium-high socio-cultural class assessed through the SES scale (Rossi, 1994). After confirming the inclusion criteria of the sample, in order to assess the level of mentalization we administered every teacher with RFQ_8 test (Luyten, 2017). In conclusion we investigate children academic achievement with BVSCO (Cornoldi & Tressoldi, 2013), Test MT 3 Clinica (Cornoldi et al., 2015) and Test AC-MT 6-11 (Cornoldi et al., 2020). The aim of this study is to investigate how the RFQ teachers' results correlates with the level of academic achievement of the class.

2.1. Instruments

The protocol used consists of the following tests:

- SES: Self-administered questionnaire that allows collecting information about the level of education and professional of parents and indicates the position of the person or family within the social system (Rossi, 1994).
- WISC-IV: The IQ has been evaluated through the administration of Wechsler scales (Wechsler, 2003), multicomponent intelligence scales that allow to synthesize the intellectual ability of a subject through a global IQ index, the Verbal Comprehension Index (ICV, verbal reasoning ability on the basis of previously learned information), the Visuo-Perceptive Reasoning Index (IRP), the Index of Working Memory (IML, ability to maintain information and use it within seconds) and the Processing Speed Index (IVE, ability to process information efficiently);

- RFQ_8 (Reflective Functioning Questionnaire. Self-administered questionnaire that evaluates the level of mentalization possessed by two subscales, which evaluate certainty (RFQ_C) and uncertainty (RFQ_U) about the mental states of self and others. The highest scores at these subscales indicate two distinct RF disorders, respectively, hypomentalization and hypermentalization. Hypomentalization reflects concrete thinking and poor understanding of the mental states of self and others, while hypermentalization describes that attitude towards the identification of too certain and detailed patterns of mind and mental states not supported by evidence (Luyten, 2017);
- Test MT – 3 Clinic: to measure reading and comprehension skills from primary school to the second year of secondary school (Cornoldi et al., 2015);
- BVSCO -2: to evaluate all aspects involved in the learning path of writing: graphism, spelling competence and the production of written text (Cornoldi & Tressoldi, 2013);
- AC-MT 6-11: for the assessment of numerical and computational skills including tests of calculation and writing and recovery of arithmetic facts (Cornoldi et al., 2020).

2.2. Procedures

Mentalization as a combination of self-reflective and interpersonal components which provides the ability to reflect and understand their own and the other ones mental and emotional states. The development of this ability leads to recognize actions as a result of mental states. The Reflexive Function (RF) consists in the mental ability to manage the proper and the other one's behavior. In this way, children could respond not only to the others' behavior but also to their feelings, beliefs and expectations that underpin and motivate human behavior. The RF is strictly linked to attachment: indeed, a secure attachment allows the development and improvement of cognitive and socio-affective intelligence, emotional regulation and the ability to mentalize. In order to assess the teachers' level of mentalization we administered every teacher with RFQ_8 test after 4 months of school (Luyten, 2017). After, we investigate children academic achievement with BVSCO (Cornoldi & Tressoldi, 2013), Test MT 3 Clinic (Cornoldi et al., 2015), and Test AC-MT 6-11 (Cornoldi et al., 2020). The aim of this study is to investigate how the RFQ teachers' results correlates with the level of academic achievement of the class.

3. Results

Data analysis was carried out using the SPSS 26.0 statistical survey software. Significance was accepted at the 1% level ($\alpha < 0.01$). In that study, we decided to perform a correlation analysis to investigate whether faculty mentalization skills could affect the average school attendance of students. From our analysis positive correlations emerged between the Certainty subscale and the performance of students measured at reading tests in correctness [$r = 0.962$; $p < 0.001$], at mathematics tests in correctness [$r = 0.908$; $p < 0.001$] and at writing tests [$r = 0.954$; $p < 0.001$]. These data show that as you increase the certainty of your mentalization skills and the ability to understand mental states, you improve your students' performance skills (expressed in a reduction in the number of errors to the tests administered). In addition, inverse correlations were found between the Certainty sub-scale and the performance of the students measured at the speed reading tests [$r = -0.956$; $p < 0.001$], under understanding [$r = -0.921$; $p < 0.001$] and at the speed mathematics tests [$r = -0.926$; $p < 0.001$]. These data show that as teachers' mentalization skills and ability to understand mental states in others increase, so do students' performance skills (expressed in a reduction in the time taken to complete the tasks of speed and a reduction in errors in comprehension tests). Regarding to the Uncertainty subscale, positive correlations were found with the performance of the students measured at the reading tests in rapidity [$r = 0.944$; $p < 0.001$], in comprehension [$r = 0.905$; $p < 0.001$] and at the mathematical tests in rapidity [$r = 0.928$; $p < 0.001$]. These data show that with decreasing uncertainty in faculty mentalization skills and the ability to understand mental states in others, they improve students' performance skills (expressed in a reduction in the time taken to complete the tasks of speed and a reduction in errors in comprehension tests). Inverse correlations were also found between the Uncertainty subscale and the performance of the students measured at correctness reading tests [$r = -0.955$; $p < 0.001$], at correctness mathematics tests [$r = -0.914$; $p < 0.001$] and at writing tests [$r = -0.948$; $p < 0.001$]. These data show that with decreasing uncertainty in faculty mentalization skills and the ability to understand mental states in others, they improve students' performance skills (expressed in a re-duction in the number of errors in the correctness tests) [Table 1].

Table 1. Correlations between RFQ and Learning outcomes.

		MT_CORR	MT_RAP	MT_COM	AC_MT_CORR	AC_MT_RAP	BVSCO_ERR
RFQ_C	r	.962	-.956	-.921	.908	-.926	.954
	p	<0.000*	<0.000*	<0.000*	<0.000*	<0.000*	<0.000*
RFQ_U	r	-.955	.944	.905	-.914	.928	-.948
	p	<0.000*	<0.000*	<0.000*	<0.000*	<0.000*	<0.000*

*Statistical significance

4. Discussion

Schools are often unresponsive to the needs of new generations; instead, they fail to understand the importance of competency-based instruction. Our research reveals that schools ignore the ability to place knowledge and expertise in context and fail to understand the importance of context when teaching concepts. Instead, schools should adopt a conceptual approach and curriculum focused on achievement. This would allow for schools to better respond to students' needs. Schools currently use a grade-based system. This causes students to struggle due to differences in their performance. Classifying students by age erases the educational benefits of encouraging students to interact with others and increase confidence. Instead, schools should highlight students' ability to solve problems and develop new skills through creative thinking. It is crucial to underline how different level of mentalization could affect education. It is well knowing how attachment is influenced by how parent handle ordinary situations with the baby. At the same way the faculty of ipomentalize or ipermentalize of teacher could have consequences on the learning ability of pupils. The ecological systems theory (Bronfenbrenner, 1979) highlights the influence of contextual factors on human behavior. Relationships and, in general, contexts close to the subject (microsystems) foster competence (King & Ganotice, 2014) and motivate school engagement (Veiga et al., 2012) providing they guarantee positive, affective support (Hughes & Chen, 2011). Traditionally, three microsystems (family, circle of friends and school environment) have been considered to have the greatest impact on adjustment among school children (Ou, 2005; Ramos-Díaz et al., 2016) with family being seen as the predominant one, even more so than school environment (Alves et al., 2017). However, more recent findings suggest that it is in fact teachers' support that has the greatest influence on school engagement, followed by family, while peers appear to have no effect at all (at least not directly) on this construct (Fernández-Zabala et al., 2016; Rodríguez-Fernández et al., 2016). Our analysis investigates how both high or low level of certain and uncertain could correlate with learning skill. We found that a good level of mentalization, expressed in term of certain scale had significance influence of learning skills measured in terms of mistakes and in terms of time. We confirm this data also in the correlation with the Uncertain Scale of Mentalization. For teachers, mentalization is a tool for understanding both students and their own mental states. Teacher mentalization is the process by which teachers understand students' minds and reflect on themselves, and these processes underlie the empathy that teachers display. Teachers affect children' learning ability based on their motivation to understand or not understand the internal state of students (Ickes, 2011; Smith et al., 2011). Identifying teachers' involvement in the process of understanding and responding to students' inner states with sensitive care is critical to effective classroom interaction.

5. Conclusion

In conclusion, considering there are several effective factors in student's educational achievement, including motivational variables, teaching practices and classroom construction, therefore, we recommended further studies in order to find the effect of each factor with a more assertive methods and more advanced processing. We also want to underline the need to have a follow-up for a major generalization.

References

- Abdul Gafor, K., & Kurukkan, A. (2014). Construction and Validation of Scale of Parenting Style. *Guru Journal of Behavioral and Social Sciences*, 2(4), 315-323.
- Alves, A. F., Assis, C. M., Martins, A., & da Silva, L. (2017). Cognitive Performance and academic achievement: How do family and school converge? *European Journal of Education and Psychology*, 10(2), 49-56.
- Borelli, J. L., Hong, K., Rasmussen, H. F., & Smiley, P. A. (2017). Reflective functioning, physiological reactivity, and overcontrol in mothers: Links with school-aged children's reflective functioning. *Developmental Psychology*, 53(9), 1680-1693.
- Bronfenbrenner, U. (1979). *The ecology of human development*. Cambridge: Harvard University Press.
- Camoirano, A. (2017). Mentalizing makes parenting work: A review about parental reflective functioning and clinical interventions to improve it. *Frontiers in Psychology*, 8, 14.
- Cornoldi, C., Baldi, A. P., Giofrè D., & Carretti B. (2015). *Prove MT-3 Clinica: La valutazione delle abilità di lettura e comprensione per la scuola primaria e secondaria di I grado*. Giunti.
- Cornoldi, C., Lucangeli D., & Perini N. (2020). *AC-MT 6-11 anni. Prove per la classe. Valutazione standardizzata delle abilità di calcolo e di soluzione di problemi*. Erickson.
- Cornoldi, C., Re, A. M., & Tressoldi, P. E. (2013). *BVSCO-2: Valutazione della Scrittura e della Competenza Ortografica*. Giunti.
- Ensink, K., Bégin, M., Normandin, L., & Fonagy, P. (2017). Parental reflective functioning as a moderator of child internalizing difficulties in the context of child sexual abuse. *Psychiatry Research*, 257, 361-366.
- Fernández-Zabala, A., Goñi, E., Camino, I., & Zulaika, L. M. (2016). Family and school context in school engagement. *European Journal of Education and Psychology*, 9(2), 47-55.
- Hughes, J. N., & Chen, Q. (2011). Reciprocal effects of student-teacher and student-peer relatedness: Effects on academic self efficacy. *Journal of Applied Developmental Psychology*, 32(5), 278-287.
- Ickes, W. (2011). Everyday mind reading is driven by motives and goals. *Psychological Inquiry*, 22(3), 200-206.
- Jedrychowski, W., Perera, F., Jankowski, J., Butscher, M., Mroz, E., Flak, E., & Sowa, A. (2012). Effect of exclusive breastfeeding on the development of children's cognitive function in the Krakow prospective birth cohort study. *European journal of pediatrics*, 171(1), 151-158.
- Katznelson, H. (2014). Reflective functioning: A review. *Clinical psychology review*, 34(2), 107-117.
- King, R. B., & Ganotice, F. A. (2014). What's happening to our boys? a personal investment analysis of gender differences in student motivation. *The Asia-Pacific Education Researcher*, 23(1), 151-157.
- Luyten, P., Mayes, L. C., Nijssens, L., & Fonagy, P. (2017). The parental reflective functioning questionnaire: Development and preliminary validation. *PLoS One*, 12(5), e0176218.
- Ou, S. R. (2005). Pathways of long-term effects of an early intervention program on educational attainment: Findings from the Chicago longitudinal study. *Journal of Applied Developmental Psychology*, 26(5), 578-611.
- Premack, D., & Woodruff, G. (1978). Does the chimpanzee have a theory of mind? *Behavioral and Brain Sciences*, 1(4), 515-526.
- Ramos-Díaz, E., Rodríguez-Fernández, A., & Revuelta, L. (2016). Validation of the Spanish Version of the School Engagement Measure (SEM). *The Spanish Journal of Psychology*, 19, e86.
- Rodríguez-Fernández, A., Ramos-Díaz, E., Fernández-Zabala, A., Goñi, E., Esnaola, I., & Goñi, A. (2016). Contextual and psychological variables in a descriptive model of subjective well-being and school engagement. *International Journal of Clinical and Health Psychology*, 16(2), 166-174.
- Rossi, G. (1994). *La rilevazione del SES in due contesti culturali italiani*. Poster session presented at the Giornata di studio "Lo stile dell'interazione madre bambino in differenti contesti culturali italiani". Potenza.
- Rostad, W. L., & Whitaker, D. J. (2016). The association between reflective functioning and parent-child relationship quality. *Journal of child and family studies*, 25(7), 2164-2177.
- Senehi, N., Brophy-Herb, H. E., & Vallotton, C. D. (2018). Effects of maternal mentalization-related parenting on toddlers' self-regulation. *Early Childhood Research Quarterly*, 44, 1-14.
- Smith, J., Ickes, W., Hall, J., & Hodges, S. (2011). *Managing interpersonal sensitivity: Knowing when and when not to understand others*. New York, NY: NOVA Science.
- Veiga, F. H., Bahia, S., Nogueira, J., Melo, M., Caldeira, S., Festas, I., ... & Carvalho, C. (2012). Portuguese adaptation of Students Engagement in School International Scale (SEISIS). Proceedings. In *International Conference of Education, Research and innovation* (pp. 3356-3362). International Conference of Education, Research and Innovations.
- Wechsler, D. (2003). *Wechsler Intelligence Scale for Children* (4th ed.). San Antonio, TX: Pearson.