MENTALIZATION, SOFT SKILLS AND LEARNING

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Abstract

Mentalization is the ability to infer other mental states, desires and intentions. It could be implicit, explicit or it may refer to self and others or it may be cognitive or affective. It underpins the complexity and the creation of social interactions. It is now understood that mentalizing is not a singular process; rather, it encompasses a range of specific and nonspecific sub-processes, known and unknown, including emotions, reasoning, understanding causality, and distinguishing between self and others. Social skills such as communication and cognition become part of the umbrella term “soft skills” when it comes to negotiation skills and the ability to interact positively with each other. The term "soft skills" refers to qualities and competencies that individuals can use transversally in different contexts, e.g., adaptability, flexibility, responsibility, integrity and efficiency. Furthermore, the labour market acknowledges and rewards these skills owing to their capacity to confer flexibility and adaptability, thereby embodying the competing attributes of the future workforce. Communication skills entail discourse, dialogue, and strategic communication aspects, which serve the individual to communicate successfully and according to the individual situation and context in view of empathy for her/his own and others’ needs. It comprises presentation skills, negotiation skills, client communication, and active listening. Moreover, people better equipped with emotional intelligence can form meaningful relationships and become better listeners, leaders, and decision-makers. The study is aimed to show if a specific educational intervention through activities based on mentalization skills and soft skills could increase academic career (specifically we consider Math, Physics, Literature and Philosophy in terms of academic average). The educational intervention was based on frontal lessons and laboratory activities in which pupils learnt about mentalization processes and they had the opportunity to stimulate their ability to infer other mental states. We recruited 160 participants aged between 15 and 16 from 4 different high schools. The results show that a specific educational intervention based on soft skills and activities based on the reasoning of themselves and other’s perspective may improve academic career in terms of an academic average increased. In addition, there was a difference between humanistic and scientific subjects. In conclusion, our study proposes how the enhancement of mentalization skills and associated soft skills can improve academic performance in schools.

Keywords: *Mentalization, soft skills, learning, intervention, education.*

1. Introduction

Bateman and Fonagy (2004) define mentalization as "the mental process by which an individual implicitly and explicitly interprets the actions of self and others as meaningful on the basis of intentional mental states such as personal wants, needs, feelings, beliefs, and reasons. Within this definition, Bateman and Fonagy identify three dimensions of mentalizing: the first refers to two modes of functioning (i.e. implicit and explicit), the second to two objects (i.e. self and others), and the third to two aspects (i.e. cognitive and affective) of both the content and the process of mentalizing. Aggressive children are less accurate in identifying emotions than prosocial and altruistic classmates (Bateman & Fonagy, 2004). Children with conduct disorders show low levels of mentalizing. Hypo-mentalization reflects an inability to consider complex models of mental states, resulting in an impaired ability to understand others and the self. Hypo-mentalization may result from reduced affective sensitivity in parents due to various reasons such as high levels of stress, anxiety or parental conflict (Davies & Cummings, 1994). In addition, the concept of soft skills is fundamental. The term "soft skills" refers to a set of positive personal qualities and competencies that enhance relationships (Sejzi et al., 2013). In

particular, it refers to qualities and competencies that individuals can use transversally in different contexts, e.g. adaptability, flexibility, responsibility, integrity and efficiency. In addition, it also refers to predispositions or attitudes such as a willingness to learn and a strong motivation to acquire additional skills. Social skills such as communication and cognition become part of soft skills when it comes to negotiation skills and the ability to interact positively with each other (Touloumakos, 2020). The latter also refer to a set of skills that determine how we interact with others (Sejzi et al., 2013); this depends on the quality of mentalization processes. Soft skills are interpersonal, psychological, self-promoted and non-technical qualities. They can interact with learning processes as they relate to the social environment and the ability to form cooperative groups or teams. In addition, they also relate to good communication skills, initiative to solve problems creatively, positive attitudes and self-confidence (Dalaya et al., 2015). All these factors inevitably affect the learning of academic skills such as reading, writing or arithmetic. Math problems may be computational (dyscalculia) and involve problem solving skills (Fletcher & Grigorenko, 2017). Moreover, problem solving is in-volved also in reading and writing difficulties in terms of word-problem solving. Word-problem solving is the best school-age predictor of adult employment and wages, so it is essential in the span life. Good communication skills affect academic ones because of the correlation between those abilities such as reading comprehension and writing skills in which there is a manipulation of verbal stimuli (Fuchs et al., 2019). The association between learning difficulties and aspects of self-esteem and self-confidence are well documented and may have implications on individuals' coping style in and out of school, academic achievements, and general wellbeing (MacMaster et al., 2002; Valas, 1999). In this study the focus was on soft skills in the light of an active improvement of mentalization processes through an innovative teaching style that involves such skills. We wanted to analyze the correlations between the reflective functions of the student and learning skills, through a sample of 160 adolescents between 15 and 16 years of age. The scientific contribution made highlights the importance of transversal skills in innovative teaching.

2. Methods

In this study, we considered 160 participants aged between 15 and 16. All the participants had been recruited from the same city (Rome, Italy) belonging to 4 high schools (scientific address) and they were homogeneous in terms of the socio-cultural background of the parents. Therefore, the inclusion criteria were as follows: (a) an IQ between 95-105 through the WISC-IV (Wechsler, 2003; Orsini et al., 2012); (b) absence of other psychiatric illness assessed by K-SADS (Ambrosini, 2000); (c) medium-high socio-cultural class assessed through the SES scale (Rossi, 1994).

After confirming the inclusion criteria of the sample, the participants did not have different sociocultural factors. The experimental group is composed of 160 participants with an average age of 15.36 (SD 0.42) and an average SES index of 6.72 (SD 1.20), of which 71 are males and 89 females.

In order to assess academic skills, the average of specific subjects (Math, Physics, Italian Literature and Philosophy) was assessed in two times: the first time (T0) after 4 months since the beginning of the school, and the second time (T1) at the end. The interventions lasted 5 months, one time per month. The data were collected at the Rome University of International Studies (UNINT).

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 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).
- YRFQ – 8: to provide an easy to administer self-report measure of mentalizing. It is composed of 8 item on the ability to infer mental states (Fonagy et al., 2016);
- K-SADS: a diagnostic interview for the evaluation of psychopathological disorders (past and present) in children and adolescents aged 6 to 17 years according to the criteria of DSM-5. It consists of: an introductory unstructured interview, a diagnostic screening interview, a checklist for the administration of diagnostic supplements, five diagnostic supplements (mood disorders, psychotic disorders, anxiety disorders, attention deficit disorders and disruptive behaviour, substance abuse) for each of which the criteria re-quired by the DSM are provided, a

comprehensive checklist of the patient's clinical history and a scale for the overall assessment of the current functioning of the child (VGF) (Ambrosini, 2000).

2.2. Procedures

We administered the Y-RFQ 8 after 4 months from the beginning of school. We measure the academic average of the following subjects: Math, Physics, Italian Literature and Philosophy. After that we provided the intervention. It was composed of training courses (frontal lessons and laboratory activities) organized by the Rome University of International Studies (UNINT). It is structured as follows: an overall of 15 hours divided into 5 modules (3 hours each). Three theoretical modules that provide lectures with final debate among students. The first one was a theoretical lesson on the emotional regulation and affective development; the second one was on the awareness of themselves and the other one focusing on know our and the others' mind; the third one was on our relationships and the differences between each other. Moreover, the practical modules were respectively on the exploration of our emotions and telling our life history to the class as an instrument of self and the other-knowledge. The intervention lasted 5 months and it was repeated one time per month. Finally, we assessed Y-RFQ 8 and we measured the academic average at the end of the school year.

3. Results

Data analysis was conducted using SPSS 26.0 statistical data collection software. Significance at the 5% level ($\alpha < 0.05$) was accepted.

We compared all the sample at T0 and T1 (within variable - time) to assess whether there were improvements in mentalization skills (RFQ_C and RFQ_U) after narrative teaching training. We also wanted to find out if there were any improvements after the teaching training, both in the humanities and in scientific subjects. Therefore, we performed three ANOVA repeated measurements: in the first ANOVA we have the within factor (time at 2 levels) and dependent variable at 2 levels (scale=RFQ_C and RFQ_U). In the second ANOVA we have the within factor (time to 2 levels) and dependent variable scale SD (scientific subjects), and in the third ANOVA we have the within factor (time to 2 levels) and dependent variable scale UD (humanistic subjects).

These analyses showed the following results: Interaction between RFQ*time is significant [F (1,159) = 236.853, p<0.001]. This data indicates that there is a significant interaction between the two subscales and time. More specifically, after the intervention there is a significant improvement in mentalization skills; at T0 the RFQ_U was low while the RFQ_C was high, while at T1 both tend to normalize (Table 1).

*Table 1. Interaction between time*RFQ.*

Time	Scale	Means	SD	F	P
0	RFQ_C	9.17	1.92		
	RFQ_U	7.60	0.61		
1	RFQ_C	8.41	0.49		
	RFQ_U	9.43	0.49	236.853	<0.000*

**Statistical significance*

Interaction between UD*time is significant [F (1,159) = 498.727, p<0.001]. This data indicates that there is a significant interaction between academic performance and time. More specifically, there is a more significant improvement after the teaching intervention in the school average in relation to the humanities (Table 2).

*Table 2. Interaction between time*UD.*

Time	Scale	Means	SD	F	P
0	UD	5.77	0.80		
1	UD	8.15	1.05	498.727	<0.000*

**Statistical significance*

Interaction between SD*time is significant [F (1,159) = 189.803, p<0.001]. This data indicates that there is a significant interaction between academic performance and time. More specifically, there is a significant improvement in the school average after the teaching intervention (Table 3).

*Table 3. Interaction between time*SD.*

Time	Scale	Means	SD	F	P
0	SD	5.67	0.81		
1	SD	6.71	0.53	498.727	<0.000*

**Statistical significance*

4. Discussion

Mentalization as a theory of mind encompasses a set of skills that enable humans to solve problems in a world full of other minds. Examples include our ability to infer other people's emotions, to understand the visual perspective of others, to attribute behavior to the underlying intentions and desires of actors, and to grasp the fact that others' beliefs may misrepresent reality (Apperly, 2012; Apperly et al., 2008; Baron-Cohen et al., 1997; Flavell et al., 1981). Our results show an improvement in mentalization skills after the intervention. We explain this result because through a teaching based on the teaching of mentalization skills has somehow increased students' awareness of these skills.

Moreover, our teaching intervention had an effect on academic average of specific subjects that we divided into humanities and scientific. There was a major improvement in the humanities one.

Numerous studies have found that a combination of personal qualities and soft skills can help improve the employability of graduates (Wye & Lim, 2009), especially soft skills that are broadly applicable (Attakorn et al., 2014). They also refer to a set of skills that determine how we interact with others, so their relationship to mentalization is obvious (Sejzi et al., 2013).

The description of soft skills helped us predict improvement in the academic subjects analyzed. Qualities (some of which can be found in the emotional intelligence literature) such as adaptability, flexibility, responsibility, courtesy, integrity, professionalism and effectiveness, as well as values such as trustworthiness and work ethic (Wats & Wats, 2009; Touloumakos, 2011; Robles, 2012; Ballesteros-Sánchez et al., 2017); voluntariness, predispositions, attitudes such as good attitude, willingness to learn, learning to learn other skills, diligence, working under pressure or uncertainty (Stasz, 2001; Stasz et al., 2007; Andrews & Higson, 2008; Cinque, 2017); problem solving, decision making, analytical thinking/thinking skills, creativity/innovation, handling knowledge, critical judgement (Cimatti, 2016; Succi, 2019; Succi & Canovi, 2019; Thompson, 2019); other areas covered are cognitive skills or processes (Ballesteros-Sánchez et al., 2017, Cimatti, 2016; Thompson, 2019), the ability to plan and achieve goals (Cimatti, 2016).

All of these contribute to learning strategies and method of study. An effect on the learning abilities of such subjects may have been occurred. Better methods of study resulting from implications on individuals' coping style in and out of school, academic achievements, and general wellbeing (MacMaster et al., 2002; Valas, 1999) could lead student to a better academic career.

5. Conclusion

In conclusion, our study proposes how the enhancement of mentalization skills and as-sociated soft skills can improve academic performance in schools. However, the relationships between colder cognitive processes that could be investigated in future studies remain uncertain, in the perspective of structuring a teaching that has the goal of im-proving the individual's skills for future job success. Finally, more in-depth studies are recommended that also take these aspects into account.

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