



Cap sur l'école inclusive
en Europe



Resource Sheet

Empathy and neurosciences (2) : « Empathic neurons »

Section of the module/D

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1 – Thematic

The theme discussed here is “**Empathy and neurosciences: “empathic neurons”**”

The purpose of this resource sheet will be to deepen the questions addressed in the resource sheet "Empathy and Neuroscience (1)", namely:

- on the one hand, to clarify the question of what empathy is, from the point of view of the neurological, cognitive and subjective functioning of the learner;
- on the other hand, to answer the question of the special place that scientific considerations on empathy can take in the educational and pedagogical accompaniment work with learners with Special Educational Needs.

As we'll see it, the new considerations introduced by neurosciences can **modify our representations of what empathy allows from the point of view of teaching and learning, and thus stimulate the implementation of specific pedagogical tools.**

When looking at "mirror neurons" (see resource sheet "*Empathy and Neuroscience (1): Mirror Neurons*"), we saw that **an observed situation has the same cognitive and neuronal significance that an undertaken action**, and thus the teacher can in certain contexts put in place educational tools (for example observation) soliciting **the phenomenon of cognitive resonance** (Rizzolatti, 2006).

We will now examine: on the one hand, the fact that **this resonance mechanism can operate only in a specific relational and social context** and, on the other hand, that **it is this relational context that is according to the neurosciences** (thus confirming intuitions suggested by the socio-constructivist current) **the driving force of learning.**

Empathy and learning: “empathic neurons”

Recent neuroscience research points indeed to the existence of specific neural structures, aimed at enabling interactions and social relations.

We saw (in the resource sheet "*Empathy and Neuroscience (1): the mirror neurons*") that the mechanism of resonance (cognitive, but also affective and emotional resonance) is crucial for the cognitive and intellectual development of a person's brain. We must add here, based on the work of social neuroscience, that this mechanism of resonance plays a decisive role in the construction of social relations, and that the subject's ability to **resonate** with his / her interlocutor will participate to his / her socialization. This is true for the integration of social and cultural codes, but also for the **development of the intellectual and learning abilities of the subject**.

From this point of view, the learner's ability to become emotionally and affectively resonant with his / her teachers, his / her caregivers, but also his / her peers is crucial. As Damasio emphasized: "*emotion is the foundation of reason*" (Damasio, A., *Descartes' error*, 1995). Let us add that **in mirror, it will be the ability of his / her teachers, his / her companions, but also of his / her peers to enter into affective emotional and affective resonance with him / her that will allow the subject to develop his / her own capacities of affective and emotional resonance**. This is essential to be considered for the **construction of learning tools adapted to children with Special Educational Needs**. Because of their problems, this ability can be hindered for these children. However, it is sometimes only after working about empathic capacity that the learning ability can be stimulated again.

This ability to be emotionally and cognitively resonant with others (what Siegel calls "relational spirit") is structural for the individual. It is this **function of the mirror neurons that was theorized by Professor Vilayanur S. Ramachandran** (Ramachandran, 2010). The relevance of Ramachandran's work in the question before us is that it conceptualizes the child's learning ability, as well as the ability to transmit the teacher's knowledge, as being conditioned by the existence of mirror neurons he called "**empathic neurons**".

Ramachandran argues that it is the existence of these empathic neurons in human beings that founded cultures and civilizations because, according to him, **the transmission of knowledge, know-how and self-management skill can only be done by a universal sharing of this empathic capacity**.

Vilayanur S. Ramachandran's Lecture on "Empathic Neurons"



Lien :

https://www.ted.com/talks/vs_ramachandran_the_neurons_that_shaped_civilization?language=fr#t-159886

Social codes and socialization

These empathic neurons would also condition the subject's ability to understand the other and to anticipate and decode, decipher what motivates him / her (his / her feelings), his / her emotional states and his / her affective intentions. **This empathic capacity is therefore crucial to enable the subject to socialize and engage in complex social relationships (such as the learning relationship).** What cognitive neuroscience calls "**social cognition**" and what philosophers (from Aristotle to Hegel) or humanities and social sciences have spotted in their respective fields as the "dialectic of the subject and the Other".

2/ Context

We are in a class (primary or secondary school) where a pupil is psychologically disabled. This pupil has learning difficulties. The teaching staff points out the difficulty of working in a group or entering a two-way relationship with the teacher.

Here, based on the neuroscience finding that **the development of empathic capacities conditions the development of learning abilities**, the teacher can set up a pedagogical tool in order to **initiate or reinforce the pupil's empathic capacities**.

Moreover, since it is **the ability of his teachers, his companions, but also his peers to enter into emotional and affective resonance with him that will allow the subject to develop his own affective and emotional resonance abilities**, the teacher can put in place a specific pedagogical tool to **work on this empathic capacity in a large group, and can get involved as well**.

3/ Goal

This sheet is to be attached to the module's trunk D as Define. It is a matter of defining here what we are talking about when talking about empathy as a real driver and a resource in learning. It is a question of providing resources to the teacher or to the accompanying person enabling him / her to modify his / her representations of what empathy allows from the point of view of teaching and learning, and thus to promote the implementation of innovative educational tools.

4/ Limits

The limit to be considered here is that, as neuroscientists point out, the resonance mechanism can only operate in a precise relational context, where a benevolent communication dominates.

5/ Prospects

To overcome these limits, the teacher can rely on the so-called "non-violent communication" approach (see on this point the resource sheet: "**Empathy and benevolent communication**").

In addition, to promote the construction of educational tools that promote the empathic ability (**cognitive, affective and emotional resonance abilities**), the teacher or coach may rely on a specific pedagogical sheet (for example, "**Teaching empathy at school**").

