*Environment and Social Psychology (2024) Volume 9 Issue 1*
doi: 10.54517/esp.v9i1.1945

RESEARCH ARTICLE

# Emotional metaphors for an inclusive classroom climate

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**ABSTRACT**

In this paper, after examining several studies that link emotional competencies with classroom climate, we proceed to review several studies that highlight the role of metaphors in this regard. First, metaphors and their relationship with an inclusive classroom climate that favors emotional well-being are reviewed, followed by embodied metaphors. Finally, the implications of the use of metaphor as an educational tool to promote an inclusive and emotionally positive classroom climate are discussed, both in teacher training and with regard to students.

***Keywords:*** classroom climate; educational inclusion; Emotional Intelligence; metaphor; embodied cognition

## 1. Introduction

Nowadays we hear about inclusive language and its importance. Also, in educational environments. In this sense, following Ponce-Díaz and Riveros-Diegues[1] the teacher represents an intermediary role between the linguistic spheres of the school and those that take place in the environment of the students when it comes to gathering the diversity of the student body as a contribution to the resignification of "educating in diversity". In this task, the teacher uses language in all its complexity; with its direct and indirect aspects; with its perlocutionary consequences on the interlocutor, in this case, the students. That is to say, when uttering language, it has effects on the feelings, perceptions, etc. of the students. And these consequences are not limited to a mere comprehension in a speech act, but have effects even at a bodily level. Therefore, it is important to consider these aspects of language, which may be hidden at times, but which influence students. In that sense, inclusive and emotional language does not remain only at the literal level, but also resides in its indirect uses, as in the case of metaphor. Therefore, it is important to examine how metaphor affects the socioemotional climate in the classroom context, in order to be aware of the influence it has and to be able to use it in the most inclusive and healthy way possible.

## 2. Classroom climate and emotional intelligence

It was Salovey and Mayer[2] who, for the first time, conceptualized Emotional Intelligence as a skill. Currently, the four dimensions included in the model are: 1) emotional perception and expression; 2)

**ARTICLE INFO**
Received: 26 July 2023 | Accepted: 8 September 2023 | Available online: 22 November 2023

**CITATION**
Herranz-Hernández P, Fernández-Hernández JL, Segovia-Torres L. Emotional metaphors for an inclusive classroom climate. *Environment and Social Psychology* 2024; 9(1): 1945. doi: 10.54517/esp.v9i1.1945

emotional facilitation; 3) emotional understanding and 4) emotional regulation[3,4]. Thus, emotional competence is composed of skills that enable students to recognize, manage and express emotions, as well as to empathize with others[5]. These skills are needed to work collaboratively, establish social relationships, solve social problems, as well as to coexist peacefully with others[6]. Furthermore, in the school environment, relationships have been found between the emotional competence of students and teachers and the improvement in the classroom environment[7]. When this classroom environment or climate is positive, children's emotional well-being is enhanced[8–12]. Notably, the interaction between children's well-being and school climate takes place in both directions, in a kind of dialectical tension between the two[11,13]. Therefore, it is to be expected that any effort aimed at improving emotional competence will have a positive impact on improving the school climate. In this sense, emotional intervention programs report benefits such as reduction of conflicts and violence, coping with stress or depression, improved self-esteem and social participation, as well as cognitive development and academic performance[14].

And as has been pointed out, it is not only possible to intervene in students, but also in teachers, since the latter's training in socioemotional and relational aspects favors children's results[15]. Improving students' relationships, both with their teachers and with their peers, positively redounds to their emotional well-being[13,16,17]. Therefore, it is important to direct all research and educational efforts to foster a positive classroom climate, and one way to do so is through emotional education.

## 3. Metaphors as a resource to improve the emotional and inclusive classroom climate

A study by Newland et al.[18], used the metaphor of the seasons of the year to analyze students' experiences of emotional well-being in the classroom. Such metaphors were based on the axes of affective valence and activation and were combined to varying degrees in each metaphorized season. Specifically, spring emotions had positive valence and low arousal or activation, as in the case of emotions of acceptance, satisfaction or security. Such springtime emotions were abundant in children's descriptions of their subjective well-being in the context of social relationships at school. Emotions metaphorized as summertime had positive valence and high activation, such as fun/excitement. They were characterized as intense positive feelings about school-based interpersonal relationships. However, they did not occur as frequently as spring emotions, although they remained a significant component of children's relationship experiences at school. Autumnal or fall emotions had negative valence and low arousal, appeared in situations of irritation or frustration with peers or teachers, and were used by children as part of their descriptions of subjective well-being with respect to school relationships. They did so less frequently than summer ones, but more often than summer and winter ones. Finally, winter emotions had negative or unpleasant valence and high activation, as in the cases of anger, anxiety or fear. Descriptions of these types of emotions were the least frequent, with fewer children expressing strong negative emotions about their relationships at school.

Studies such as the one just mentioned on the metaphor of the seasons of the year when studying the emotional experiences of students show the usefulness of the metaphor, not only as a methodological resource for research, but also, as we shall see below, as a pedagogical resource. It should also be noted that even the very idea of the emotional climate of the classroom is still a metaphor. We want to analyze the importance of the metaphor in the classroom and it turns out that even when it comes to doing so, it seems that we cannot get rid of the metaphor itself.

In addition, the classroom climate provides context. And context is key to understanding metaphor. In the study by Stamenkovic et al.[19], three experimental conditions were designed. In one, no context was provided, in a second condition a context congruent with the metaphor appeared, and in a third condition, the

context was congruent with the literal meaning of the metaphorical expression. The results indicated that when the metaphor was preceded by a context congruent with the metaphor, the use of semantic integration in the interpretation of the metaphor was favored.

In a metaphor we understand one thing in terms of another. Often, we metaphorically project a more complex or unfamiliar concept or domain (called a target or goal) onto a more accessible or familiar one (called a source or base)[20]. Following Banaruee et al.[21], metaphorical language serves a principle of cognitive economy by allowing us to understand the complex unknown in terms to the known, accessible, proprioceptive, etc. Moreover, in many metaphors, ideas are described through schematized images, which is a tool that facilitates the processes of understanding and interpretation, making them more accessible.

Since ancient times, there have been metaphors for conceiving emotions. Since rationalism dating back to Plato, the relationship between reason and emotions, then understood as passions, is represented by the metaphor of the master and the slave. Reason is the master, who controls the slave, the emotion or passion dependent on the body. This conception considers that emotion occupies a hierarchically inferior position with respect to reason. Another metaphor used by Plato is that of the charioteer, who represents reason and the two affective elements (affective and appetitive) represented by two horses. One good and the other bad[22].

Lakoff and Johnson[20] consider metaphor, not as a mere linguistic resource, but as something that resides in thought and its interaction with corporeal experience. According to Gibbs[23], the finding that thought or conceptual metaphors exist comes from expressions that are conventional in different languages. The existence of the same metaphors in different languages suggests that these metaphors are, at first, conceptual and deeply rooted in human experiences. According to Lakoff and Johnson[20], in line with the metaphor discussed above on reason and emotion, since human beings are considered capable of reasoning and animals are not and, furthermore, that we are superior to them and can control them, then the metaphor "rational is above, emotional is below" is deeply rooted. This makes us think in terms such as the following: "you have to overcome emotions", "the discussion has fallen to an emotional plane", etc. In this regard, Meier and Robinson[24] asked, in a first study, participants to evaluate words presented on a computer screen. They found that evaluations of positive words were made more quickly when they appeared upward. Evaluations of negative words, on the other hand, were made more quickly when they were facing downward. They also found that positive evaluations activated higher areas of visual space, while negative evaluations activated lower areas. Perhaps in this sense it would be appropriate to promote a more updated and scientific idea of emotions by questioning these metaphors or proposing others that question such a hierarchy between reason and emotion, given the adaptive nature of the latter.

In relation to educational inclusion, there are also metaphors. For example, Echeita Sarrionandia[25] uses the metaphor that relates having to drive a car in a country where people drive on the other side with the fact of moving towards inclusive, quality education for all students. In both cases, we are traveling to an unknown land where the schemes we have are not going to serve us. It is also metaphorical to speak of barriers to inclusion. Or even the very concept of Universal Design for Learning (UDL) is a metaphorical projection, from the field of architecture, whose pioneer was Ron Mace, who proposed environments accessible to all people, to education, trying to achieve an Education accessible to all students. Another example comes from Hoban's[26] study with university students, in which the author asked them to reflect on the teaching-learning process. One of the participants used the metaphor of learning as a playground. In it, the sandpit represented a place for peer interactions, such as collaboration, discussion with others, or a space to create personal meaning. The entire playground needed to be in a relaxed and enjoyable environment.

In a work with children aimed at getting them to reflect on their emotions, Valvusa and Camerella[27] asked them to analyze their emotions in a diary. To do so, they had to write a narrative about an experienced emotion and analyze it in the light of the metaphor of the "orchard of emotions". According to this metaphor, every emotion is related to a plant. Thus, the aim was to facilitate the recognition of the event that triggered an emotion, as well as the manifestations and thoughts linked to it. The results provided elements in the way children self-understood their emotions, such as: the event that originated the emotion, the cognitive operations and thoughts involved, the intensity of the emotion or the desire that accompanies it. In addition, it became clear that the act of narrating and the process of analysis mediated by the orchard metaphor constitute instruments that make possible the children's affective self-control.

# 4. Emotional and inclusive metaphors from the embodied approach

As mentioned above, in a metaphor, the base or source domain, which is more known and accessible, serves to better conceive another concept or domain, more distant, complex, abstract, etc., the goal. Through the metaphor, the aim is to better understand or represent the unknown in terms of the known. According to Gibbs[28], theories on metaphor situated within the cognitive approach tend to explain the process of metaphorical understanding in terms of projections made between different domains of knowledge represented in a propositional, abstract, amodal (unlinked to sensory modalities) and external to the body manner. Alternatively, he proposes that the process of metaphorical understanding is first-hand, based on experiences constructed through a more direct relationship with the senses and/or with action. Thus, the concept is metaphorized by taking as a base or source domain a representation of an embodied action, more linked to the senses or to motor action. In this way, complex phenomena such as time, causality, political ideas or emotions, cognition or morality can be better understood on the basis of embodied metaphors.

In that sense, Gibbs[28] describes some examples of metaphors that have an embodied basis. For example, that anger is a hot fluid found inside the bodily vessel. Another example would be to conceive of desire as hunger or thirst, as when we say that someone is thirsty for knowledge.

In short, abstract phenomena are often metaphorized in concrete terms. To the point that the source domain -the most known- of the metaphor is processed in an embodied way, thus being able to know the objective domain -the least known- abstract of the metaphor through a more tangible, accessible, concrete and physical domain, which makes it possible to understand and express phenomenological experiences of great complexity such as emotions[29].

Embodied cognition thus constitutes a theoretical approach that states that people construct meaning based on perceptual, interoception or motor phenomena[30–33]. Along these lines, Desai[34], after reviewing several neuroimaging studies concludes that metaphors are based on the sensorimotor system. Thus, for example, making it possible to know something complex in terms of movement[35], even having found it in several languages[36]. In this way, complex concepts such as emotions can be metaphorically projected to concrete domains. Thus, movements or gestures of the hands, but especially of the head, were directed upward and accompanied the emotions of joy, pride and anger, while they were directed downward to emotions of shame and sadness[37].

Emotions are also metaphorized based on colors[38]. However, some emotions show a metaphorical relationship with a given color in a more generalized or ingrained way than others. For example, red with anger or yellow with joy, while other associations were less frequent, as was the case of blue with sadness[39]. There are also associations between emotions and colors when those are understood in dimensional rather than categorical terms[39,40]. Thus, black was linked more with negative emotions, blue with positive emotions, gray with negative and weak emotions, while green with positive and strong emotions.

The embodied metaphors that we have selected for use in this section have been chosen following the classification of Cuetos et al.[41] and de Vega[30], who consider that metaphors appear in different languages that express moral indignation as disgust, guilt in terms of dirt or social exclusion as pain or temperature. In addition, it has been chosen because one way of working on inclusion and emotions with children is through metaphor. As this is difficult to explain explicitly to children, but their role in understanding abstract concepts such as those related to emotions or inclusion has been verified, it has been decided to use them without the need for them to know what a metaphor is. Along these lines, since there are embodied metaphors and thus become accessible at a perceptual and sensorimotor level, it seems useful and effective to use embodied metaphors linked to emotional well-being, the classroom climate, and inclusion.

Thus, disgust is one of the basic emotions, easily recognizable in others by its characteristic facial expression. It also allows us to distance ourselves from potentially harmful substances. However, we use terms referring to disgust to designate morally reprehensible behaviors in people, such as corruption, unfair actions, etc. In the study by Chapman et al.[42], the same facial emotional reaction was found, namely the activation of the lip elevator muscle of the face, to three different stimuli: unpleasant tastes, photographs of pollutants and unfair treatment in a game of winning money. This points to the same emotional response to stimuli that elicit disgust as to those that elicit moral rejection. This highlights the embodied nature of the metaphor.

The emotion of guilt is often experienced as filth. In Shakespeare's play, Lady Macbeth is complicit in a murder and feels, after the murder, the need to wash her hands repeatedly. This "Macbeth effect" was found by Zhong and Liljenquist[43], in an experimental study. They asked participants to copy a description of a moral or immoral behavior by a protagonist. After that, they were prompted to judge the desirability of a few products that might or might not be cleaning products. Those participants who had copied the immoral story scored the cleaning products as more desirable than those who had to copy the story with a moral behavior.

With respect to feeling excluded and expressing it as pain, expressions such as "stab" or "wound" are frequently used in situations of rejection or social exclusion, or even break-ups. The study by MacDonald and Leary[44] highlights many pain terms that refer to situations of social exclusion and that appear in various languages. Many of them in terms of "hurt" or "wound", "hit" or "hit", etc.

Regarding the metaphor of exclusion as temperature, it should be said that this metaphor was already proposed by Asch[45], when he said that people judge others by placing them on a psychological continuum of warmth. After that, the assumption that the subjective sensation of warmth has an important role in social cognition became stronger[46,47]. Currently, from neuroscience, evidence has been found that could support this type of thermal metaphors. For example, those that relate psychological warmth to the tactile or physical sensation of temperature[48,49]. Or those relating insula activity to feeling socially excluded[50–52].

In this respect, and from an approach closer to experimental cognitive psychology, Zhong and Leonardelli[53] conducted a study with two experiments. In the first one, they asked participants in one group to recall a past situation in which they had felt included (inclusion condition), while another group of participants were asked to recall a situation in which they had felt excluded (exclusion condition). In a second phase of the experiment, and as a stand-alone experiment, all participants were asked to estimate the temperature of the room they were in. The results showed that there was a difference of 5 ℃ in their estimates, with the temperature estimates of those participants in the exclusion condition being lower. In the second experiment of the study, the authors used a procedure designed by Eisenberger et al.[51]. This procedure consisted of participants playing a virtual game in which they threw a ball to each other. The participant believed that he/she was playing virtually with two other players, although in reality it was a

computer program that simulated the game. In the inclusion condition, the program distributed the ball passes between the three supposed players (the participant) and the other two hypothetical players. In the exclusion condition, the participant received very infrequent passes from the other two hypothetical players. In a second phase of the experiment, the participants had to judge which beverages they liked the most. The beverages were either hot (coffee, herbal teas, etc.) or cold (soft drinks). The results showed that participants in the exclusion condition showed a greater preference for hot beverages.

Similarly, Williams and Bargh[54] found that participants judged a person as warmer or more affectionate when they had been asked to hold a cup of coffee and it was warmer. Likewise, they tended to choose a gift for a friend more than for themselves when they were holding a pad that was warmer.

As in this type of studies the participants experienced the situations and metaphorized the emotions in the first person, Herranz-Hernández et al.[55] tried to find out with children whether these metaphors were extrapolated to others when the children (4th versus 6th grade of primary education) had to morally judge the behavior of other children who helped or did not help children who might be cold or hot. For the cold experimental condition, the authors presented a text narrating a short story in which some children were playing in a heated room while another child was outside in the cold. This child approached the window and saw how the other children were playing inside without being cold. One of the children inside suggested to the others to let this child in, while another child did not want to be let in. The children participating in the study were then asked to rate between 0 (very bad) and 10 (very good) the attitude of the child who wanted to let the other child in and the child who did not want the other child in. In the hot experimental condition, the text was the same, except for some words indicating that it was very hot in the street, inside they had air conditioning, etc. The subsequent questions, in this warm condition, were the same as those received by the children in the cold condition. The results indicated that, for the first question on the evaluation of the child who wants to let the other child in, there were no differences with respect to temperature, but there were differences with respect to age, in the sense that the youngest children gave higher scores to the child who wanted to help. In relation to the second question, the one related to the moral evaluation of the child who did not want to let the other child in, differences were found with respect to temperature. Specifically, the child who did not want to let the other child in was rated lower in the cold condition than in the warm condition. With respect to age, younger children gave lower scores to the child who did not want to let the other child in. An interaction effect also appeared, reflecting that the differences between scores in hot and cold conditions are more accentuated in older children. That is, older children gave less extreme responses in their moral judgments, but these were more influenced by temperature when judging a lack of help from other children. This shows that thermal metaphors are acquired or constructed throughout development and that it is possible to educate through metaphors in the acquisition of more inclusive and morally more desirable values, in line with Baca[56], for whom education has to address not only intellectual aspects, but also moral, emotional and empathic ones.

# 5. Conclusions

After this review of various studies on metaphors related to emotions and inclusion, we can infer the usefulness of metaphor as a teaching tool, both in teacher training on emotions or inclusive education, as well as for students to promote a more inclusive classroom climate. Therefore, it is worth highlighting the importance of using-not without some caution- terms such as cold, heat, disgust, anger as a bodily fluid, etc. to promote a positive and inclusive emotional climate in the classroom. We can even go further, given the findings of embodied cognition, and use not only language in this sense, but other types of resources, such as gestures[37] or colors[38]. Thus, when we intend to promote an adequate emotional and inclusive climate in the

classroom, perhaps we should go beyond the literal and delve into the intentional meaning of language mediated by indirect uses such as metaphor. Likewise, we should also realize that metaphor is not a mere linguistic resource, but could be a heritage of thought, and can be used at the educational level from a cognitive approach, and even embodied in it. The fact that the same metaphor appears in different languages points in this direction[44,36]. By allowing us to understand the abstract on the basis of the concrete, perceptive, embodied, immediate, etc., the metaphor becomes a bridging tool to take students educationally towards abstract fields such as inclusion, ethics, morality, emotions, etc. In other words, towards information that is less cognitively accessible due to its abstract nature. Therefore, if we want to change something as abstract as moral culture[57] at school and in the educational system, metaphor can be a useful and effective tool.

In this sense, metaphor would be contributing to inclusive education by providing one more form of representation, in line with two of the principles established by CAST[58] on which Universal Design for Learning is based: 1) that of providing multiple forms of representation and 2) that of providing multiple forms of action and expression. In this way, the metaphor would be facilitating students to better understand the information[59]. In addition to helping in the basic processes or dimensions of Emotional Intelligence already discussed above: 1) emotional perception and expression; 2) emotional facilitation; 3) emotional understanding and 4) emotional regulation. In addition, given that inclusive education requires presence, participation and learning[60] and taking into account the inclusive aspects whose acquisition is more related to transversal competences, even with the hidden curriculum, the metaphor, especially the embodied one, given its implicit nature, could be a powerful tool for teaching inclusive values and those related to emotional competence. This is especially important in educational stages in which, due to its conceptual complexity, it would not be feasible to teach explicitly about the metaphor. But given the early acquisition of metaphors such as inclusion as temperature[55], it is possible to use the metaphor implicitly, based especially on its embodied nature, in order to teach inclusive values and competencies. emotions in the classroom in the stage of primary education.

In relation to teachers, it should be noted that quality when implementing emotional education programs depends on factors such as adequate teacher training and available human resources, among others[61]. Hence the importance of the metaphor to also educate teachers on emotions and Emotional Intelligence. In this sense, it should be noted that many of the studies collected here on embodied metaphors in relation to inclusion and the emotional climate of the classroom (e.g.,[53,55]) are more in line with an experimental paradigm of cognitive psychology, in which experimental manipulations and the control of extraneous variables obey more to the theoretical objective of analyzing the influence of variables or terms such as therms on emotions, moral judgments, etc., but provide only very brief lines of action and not marked or detailed guidelines on how to act educationally, but they provide only very brief lines of action and no clear or detailed guidelines on how to act educationally. In this sense, there is a lack of studies linked to the classroom context and with more structured and complete didactic methodologies to provide teachers with more articulated tools around the metaphor and its educational use in the classroom. Future educational research along these lines could provide more useful and operational pedagogical tools that go beyond the mere knowledge that metaphor influences inclusive values and understanding at the socioemotional level.

Moreover, it is worth remembering that there are other indirect, implicit, etc., uses of language, in addition to metaphor, such as metonymy, that may allow us to continue searching for educational factors or tools favorable to the creation of an inclusive and emotionally intelligent classroom climate. Future work could be aimed at investigating these possibilities.

## Author contributions

Conceptualization, PHH, JLFH and LST; methodology, PHH, JLFH and LST; software, PHH, JLFH and LST; validation, PHH, JLFH and LST; formal analysis, PHH, JLFH and LST; investigation, PHH, JLFH and LST; resources, PHH, JLFH and LST; data curation, PHH, JLFH and LST; writing—original draft preparation, PHH, JLFH and LST; writing—review and editing, PHH, JLFH and LST; visualization, PHH, JLFH and LST; supervision, PHH, JLFH and LST; project administration, PHH, JLFH and LST. All authors have read and agreed to the published version of the manuscript.

## Conflict of interest

The authors declare no conflict of interest.

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