

International Journal of Human Sciences Research

THE CONSTRUCTION OF THE MATHEMATICS TEACHING PROCESS IN AN AFFECTIVE APPROACH

Márcia Cristina Araújo Lustosa Silva
Universidad Columbia Del Paraguay

Jaildo Assis da Silva
Universidad Columbia Del Paraguay

Roberta Marcelino de Albuquerque Souza
Universidade Federal de Pernambuco

All content in this magazine is licensed under a Creative Commons Attribution License. Attribution-Non-Commercial-Non-Derivatives 4.0 International (CC BY-NC-ND 4.0).



Abstract: In a globalized world, where society overvalues cognitive performance, there has been a trend that consolidates theories that understand human beings as affective subjects. Thus, it is observed that there is an intellect/affect axis, that the ability to feel emotions is indispensable for the establishment of rational behaviors. It is noticed that the difficulties in learning seem to occur as a result of an imbalance, between cognition or affectivity, or in the relationship between both. For example, with regard to cognition, from the pedagogical, psychological and psychoanalytical point of view, an individual may have learning difficulties in several areas of education, especially in mathematics, as it requires a great cognitive effort. Several psychological and sociological currents demonstrate that action and reason correspond to cognitive functions driven by mental structures and affective aspects. From this perspective, when the cognitive capacity of the human being or intelligence is mentioned, questions are raised about the individual's learning capacity in relation to the object of knowledge. This article, which aims to investigate the importance of affectivity in the construction of the teaching-learning process of mathematics, will be based on the learning theories of Piaget, Vygotsky and Wallon, who conceive the relationship between cognitive and affective processes in psychic functioning as intrinsic human. The methodology undertaken was of a qualitative nature. The instruments used were the Affect-Performance Diagram (DAP) of adapted analysis, developed by Silva and Teixeira (2009). The results point to the affective aspect, as well as the relationship between teacher and student, as fundamental variables to determine the teaching-learning process.

Keywords: Affectivity, cognitive development, mathematics teaching-learning.

INTRODUCTION

This research is the result of the restlessness and reflections made from the observations experienced in the classroom, focusing on the importance of affectivity in the process of teaching mathematics. Reflecting on a more interesting and meaningful learning, highlighting the responsibility of the education professional on the teaching-learning process permeated by affectivity.

Currently, Mathematics is considered a science of intellectual prestige and, simultaneously, a way of thinking. In reality, it constitutes a way of thinking, with origins in human language, which is expressed through a specific and unquestionable language, mathematical language, which, although universal in nature, can vary between cultures and change over time. (Nunes, 2001). The formation of mathematical knowledge, in the educational context of formal education, configures a complex process, which, if not properly streamlined and guided, can cause, in children and young people, reactions and feelings of refusal, giving up, anger and even hatred for the discipline (Moysés, 1997). For this reason, the professional practice of mathematics teachers constitutes a task of indisputable responsibility, which crosses knowledge and pedagogy, on the assumption that the formation of mathematical knowledge is not limited to an elementary variant of scientific mathematics, but encompasses the application, to the everyday life of learners, of regulated learning in sociocultural practices (Moreira & David, 2005). These are concerns common to teachers in this area of knowledge in the 21st century. Based on the assumption that the supervisory process of teaching and learning converges mathematical knowledge and the process of meaningful learning (Ausubel et al., 1978; Roldão, 2006), it is important to implement an effective active pedagogy, which is not based on mere

transmission of knowledge, in the absence of experimentation and in the predominance of individual work, as happened for a long time in traditional pedagogy (Piaget, 1975; Ruiz, 2001). That is, as learning results from the interaction between students, teachers and colleagues (Vygotsky 1994), it is necessary to consider the role of affectivity in deepening abilities and skills related to motivation and assimilation of mathematical knowledge.

Therefore, it is important to carry out a study that analyzes the influence of the affective dimension in the construction process of teaching and learning mathematics, and the student establish emotional and affective bonds during the teaching-learning process. That is, the affective development is in unison with the intellect-moral development, leading to what is called Integral and Harmonic Education, according to the historical-cultural perspective of Vygotsky's emotions (2003)

This way, it is clear that affectivity can serve as a guiding reference for the teaching-learning of mathematics, being able to promote, from these reflections, a significant and differentiated look at the teacher-student relationship

LITERATURE REVIEW

Affectivity comprises the state of mind or mood, feelings, emotions and passions and always reflects the ability to experience feelings and emotions. It is what determines the person's general attitude towards any living experience, promotes motivating and inhibiting impulses, perceives facts in a pleasant or painful way, confers an indifferent or enthusiastic disposition and determines feelings.

To conceptualize affective phenomena, there are certain controversies. Eventually, in the literature, the terms feelings, emotion and affection are used, apparently as synonyms.

Normally, the term emotion is related to the biological component of human behavior, and refers to an agitation, a physical reaction. While affectivity is used with a broader meaning, referring to the experiences of individuals and the more complex and essentially human forms of expression. Based on this assumption, it is worth noting that people interact, establish bonds and affective ties based on stimuli experienced in the environment they share.

According to Luck (1983) "affective relationships assume a special and unique role in the educational context". In this sense, it is assumed that the interactions that occur in the school context are marked by affectivity in all its aspects. Determining the nature of the relationships between subjects and the various objects of knowledge.

In a globalized world, where society overvalues cognitive performance, there has been a trend towards the consolidation of theories that are based on a more integrated view of human beings.

Philosopher Schiller (1989) says that "the path to the intellect needs to be opened by the heart". Considering that the development of the activity, at school, can make knowledge more effective, contributing to better learning.

For Morin (2002) affectivity can asphyxiate knowledge, as well as strengthen it. For the author, there is an intellect/affection axis, the capacity to feel emotions is indispensable to the establishment of rational behaviors. However, for psychoanalysis, affectivity is the set of psychic phenomena manifested in the form of feelings or emotions and accompanied by the impression of pleasure or pain, satisfaction or dissatisfaction, like or dislike, joy or sadness, according to the Freudian perspective.

COGNITIVE DEVELOPMENT AND THE AFFECTIVE DIMENSION ACCORDING TO PIAGET

Piaget (1993) considers that in human behavior both cognitive and affective aspects are present. Although the author did not choose affectivity as the theme of his investigations, he never disregarded it, nor did he neglect its existence and/or interference in the subject's actions. Although he did not systematize a model of affective development, as he did for cognitive development, his considerations in this regard are extremely relevant to psychology (Silva, 2009).

Affectivity can be seen as an energetic of action. Normally, the term "emotion" is related to the biological component of human behavior, referring to a physical agitation or reaction. According to Vygotsky's (2001) perspective, emotion constitutes an affective basis to adequately understand human thought. As for the word affectivity, it is used more broadly, referring to the experiences of individuals and to more complex and essentially human forms of expression (Silva & Schneider, 2007).

Affectivity, as the basis and domain of the psyche, is a comprehensive part of personal activity and fundamental in individual reactions and conduct. The domain of effectiveness ranges from bodily, physical, internal and external sensitivity, to the subjective interpretation of experiences, conscious or unconscious. Affectivity influences and is influenced by perception, memory, thought, will and intelligence, being in fact the essential component of balance and harmony of the personality. It is the human ability to feel and express emotions and feelings and consequently interests in relation to life, Claparède (1954).

In this perspective, affectivity in the context of psychology takes us back to psychoanalytic theory, especially Freud's contributions. Even

aware of the contributions of psychoanalysis with regard to this issue, this work does not intend to go deeper into this analysis, but to present Jean Piaget's ideas about affectivity. One might think that Piaget could contribute nothing to this aspect, since his studies were centered on the logic of thought, but the author makes important contributions, as we will see below. Thus, in Piaget's constructivist conceptualization, a Swiss epistemologist considered the greatest exponent of the study of cognitive development, states that the beginning of knowledge is constructed through interactivity between subject and object.

Piaget, (1994) considers that in human behavior both cognitive and affective aspects are present. Although the author has not chosen affectivity as the theme of his investigations, he has never disregarded it, nor has he neglected its existence and/or interference in the subject's actions. Although he did not systematize a model of affective development, as he did for cognitive development, his considerations in this regard are extremely relevant to psychology.

Affectivity would then play the role of a source of energy on which the functioning of intelligence would depend, but not its structures, in the same way that the functioning of a car depends on gasoline, which drives the engine, but does not modify the structure of the Piaget machine (1994, p.188).

The author makes his position on the affective relationship and intelligence very clear in the quote above. Affectivity is of fundamental importance in the functioning of intelligence, but it emphasizes that it does not modify its structure. Affectivity would be the driving force of all types of activity that do not occur without interest or at will. In other words, it is the energy that drives the action. The cognitive aspect cannot function without affectivity, but the affective

aspect cannot do anything without cognitive structures either.

According to Piaget, (1994, p 288), such aspects are inseparable in action, that is, in “all conduct, whatever it may be, necessarily contain these two aspects: the cognitive and the affective”. Thus, affectivity as energy can accelerate or delay the development of individuals, and may even interfere with the functioning of intelligence structures, but it can never modify, build or destroy them. In Piaget’s theory, affectivity is characterized as an instrument that propels actions, with reason in its favor.

About this, Taille, Dantas and Oliveira (1992, p.66) explain that, for Piaget, “affectivity would be the energy that moves the action, while reason would be what would enable the subject to identify desires, varied feelings, and obtain success in actions. In this case, there is no conflict between the two parties. However, thinking reason against affectivity is problematic because one must not, somehow, endow reason with some power similar to that of affectivity, that is, recognize in it the characteristic of mobile, of energy”.

It is therefore necessary to understand that for him, affectivity and cognition are inseparable, irreducible and complementary, but have different natures, the first consisting of energy, the motor of action, and the second its structuring, its organization. Action, whatever it may be, needs instruments provided by intelligence to reach a goal and this corresponds to affectivity. Thus, all human behavior involves both intelligence and affectivity. Feelings, emotions and desires correspond to the affectivity that sustains the subject’s actions.

Feeling, according to Piaget, guides all behavior to the extent that contributes value to the ends. He states that there is a parallelism between the construction of cognitive structures and affective systems in

development, but emphasizes the importance of not comparing, equating or opposing acts of intelligence with affective states, because “affectivity cannot create structures” (Piaget, 1994, p.2000) We have seen that Piaget’s proposal on affectivity is consistent with his own theory.

That said, we cannot deny the fundamental role of affectivity in the development of intelligence. Studying affectivity, as mentioned earlier, is an extremely complex task.

Therefore, a detailed study of the importance of affectivity in human development is essential, as well as its influence on the formation of cognitive structures. Wallon in his theory made the distinction between emotion and affectivity.

THE WALLONIAN PERSPECTIVES

For Wallon (1971), who dedicated a large part of his life to the study of emotions and affectivity, and who identified the first affective manifestations of human beings, the phenomenon of affectivity is of great complexity, undergoing changes during development. Affectivity does not modify the structures underlying the functioning of intelligence, but it can accelerate or delay the development of individuals, interfering with their functioning. Wallon, in his theory of human development (1979), states that, although emotion has an organic origin, it is not triggered or developed by organic means (Filho et al., 2009) Specifically, it is the interaction of the human being with the environment environment that provides the conditions for the development of the person in all its aspects. The same goes for emotion. For the author, biological capacities provide the conditions for life in society, but it is the social environment that leads to the development of these same capacities (Wallon, 1971). Affectivity, like intelligence, does not appear, nor does it remain

unchanged, throughout an individual's life course. Both evolve throughout the person's biosocial development (Silva & Schneider, 2007; Wallon, 1971) Emotion and intelligence are related throughout the individual's psychological path. Wallon alerts us to the importance that must be given to these aspects of the human personality. He also emphasizes that this is not an easy task. In order to produce intellectually, it is essential not to submit to the power of emotion, as this can affect the perception of the real world and, consequently, reduce the level of the subject's intellectual activity. Thus, the conquests of the emotional plane are also apprehended by rationality, and vice versa (Wallon, 1968). Emotion is therefore the child's language. Family relationships and parental affection exert a great influence on the development of children (Silva & Schneider, 2007) Thus, as we mentioned earlier, intelligence does not develop without affection. Affectivity plays an essential role in the development process of the child's personality, manifesting itself first in behavior and, later, in expression. Almeida (2002), when analyzing Wallon's theory (1968), points out that affectivity attributes to emotion (defined as a form of feelings and desires, with regard to manifestations of affective life) a fundamental role in the process of human development. In this perspective, emotion is understood as the bodily forms of expression of the person's state of mind, and this affective state can be painful or pleasant. Development is an ongoing process. Although the human personality is basically constituted by two functions, affectivity and intelligence, apparently inseparable, the child, while he does not have mastery of the word, uses affectivity to guarantee his relationship with the environment and with the surrounding world (Wallon, 1968). According to Almeida (2002), with the presence of affectivity

influenced by the environment, the affective manifests itself in simple gestures thrown into space, transforming, over the first years of life, into increasingly differentiated means of expression, inaugurating this way the emotional period. Currently, there is great interest in studying affect and its influence on the learning process, taking into account the path of affective-emotional growth of the student.

VYGOTSKY'S CONTRIBUTION

The process of cultural construction of meaning is one of the central themes of the cultural-historical approach in psychology. Vygotsky's (2003) contributions are fundamental for understanding the influence of emotions and knowledge on human development. Vygotsky, Russian psychologist and educator, proposed that intellectual, volitional and affective processes be considered as a unit. The separation of intellect and affection, as an object of study, would be one of the main shortcomings of traditional psychology. According to the researcher, anyone who separates thought from affect denies the possibility of studying the inverse influence of thought on the affective plane. Emotional life is connected to other psychological processes and to the development of consciousness in general (Vygotsky, 2001). Based on this assumption, the cognitive and affective dimensions are intertwined in the functioning of the psychological process.

The author implies a visible precedence of action, that is, of direct experience, which determines needs and desires. Affect constitutes a volitional force for cognition. That is, the individual is the result of the development of various processes, affective, mental, cognitive and physical, both internal and external. Therefore, it is understood that learning occurs through an intense

process of social interaction, through which the individual internalizes the cultural instruments, and the experiences shared with others, which will allow the individual re-signification of what was internalized (Silva & Schneider, 2007). This way, cognition and affection are not dissociated, on the contrary, they interrelate and influence each other, throughout the entire development process. What originates thought are emotions, desires, impulses, needs, motivations, interests and inclinations of the human being, which, in turn, exert an influence on the affective and volitional aspect (Rego, 1997). Arantes (2003) comments on the importance of affectivity, presented in Vygotsky's Cultural-Historical theory (1968), reinforcing the idea that the individual, just as he learns to think, act and speak, through the inheritance of his culture and living with others, he also learns to feel. The prolonged process of learning about emotions and affections begins in the first hours of life of any human being, extending throughout their existence.

METHODOLOGY

48 high school students from a State Technical School, located in the city of Goiana, State of Pernambuco (Brazil) were evaluated. The subjects were submitted to evaluations using the Adapted Analysis Affect-Performance Diagram (DAP). The tests were carried out in a room, under standard conditions, in a building, with fans, at a temperature of $29.0 \pm 2^{\circ}\text{C}$. Only subjects of both genders were included and only subjects who refused to be evaluated were excluded. The statistical program used was SIGMA STAT for Windows – Version 2.0 by Jandel Corporation. Data referring to student performance (Silva and Teixeira, 2009) were analyzed using the t-student test. As for the data referring to the 20 questions that assess the affective aspects related to

learning (Chácon, 2003), these were analyzed using Fisher's Exact test, which is used with nominal scales.

METHODOLOGICAL EVALUATIONS

This study was approved by the Research Ethics Committee of the Hospital da Restauração. Before data collection, all evaluated subjects filled out the free and informed consent form (TCLE).

RESULTS PRESENTATION

Analyzing the affective dimension, in relation to school performance, a better performance is observed with regard to the group of students with affective connections to their teachers. The differences found between the two groups are, as we can see, significant.

Graph 1.

Using Fisher's exact test ($p < 0.05^*$), we verified that there was a statistically significant difference between the expected values and the observed values in relation to the association between school performance and affection towards the teacher.

Graph 2.

From the data presented in the graph, it was observed that the majority of students in the High school, likes math.

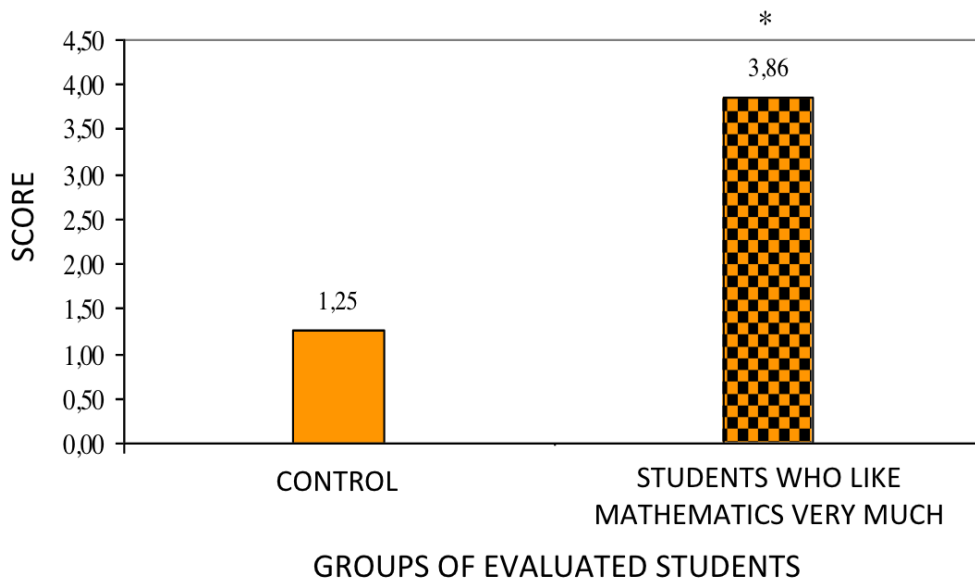
Table 1.

Then, the opinion of students who like and who don't like mathematics about their abilities to the discipline was analyzed.

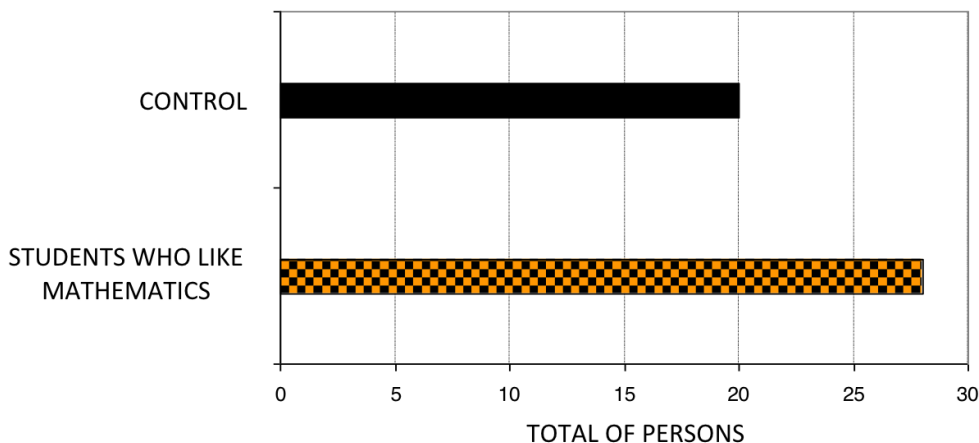
It is concluded, therefore, that, regarding the professors of the discipline, most of the students who like mathematics (EGM) classified them as excellent and dynamic, while those who do not like mathematics (CONTROLE), considered them as demanding.

Table 2.

Through Fisher's exact test ($p < 0.05^*$), it is verified that there is a statistically significant difference between the expected values



Graph 1: Evaluation of school performance.



Graph 2: Total number of persons who like math.

	ABOUT THE TEACHERS			ABOUT MATHEMATICS		
	FREQ.	BR	CLASSIFICATION	FREQ.	BR	CLASSIFICATION
CONTROL EGM	8/20	40	GREAT	5/20	25	IMPORTANT
	12/20	60	DEMANDING / BAD	15/20	75	COMPLICATED
	26/28	92.86	GREAT / DYNAMIC	25/28	89.29	IMPORTANT / WONDERFUL
	2/28	7.14	DEMANDING / BAD	3/28	10.72	HORRIBLE/ BORING
"p" value	$p = 0.0002^*$			$p = 0.0001^*$		

Table 1: Opinion on mathematics teachers.

	ABOUT THE INTERVIEWED STUDENT'S MATHEMATICAL CAPABILITIES			ON BEING GOOD AT MATH		
	FREQ.	BR	CLASSIFICATION	FREQ.	BR	CLASSIFICATION
CONTROL	3/20	15	GOOD	1/20	5	YOU MUST ENJOY DISCIPLINE
	17/20	85	LOW / LIMITED	19/20	95	DEDICATION/ SACRIFICE
EGM	24/28	85.71	GOOD/ GREAT/ NORMAL	1/28	5	SACRIFICE
	4/28	14.29	CASUALTIES	27/28	96.43	PASSION/ LIKE/ MOTIVATION
"p" value	$p < 0.0001^*$			$p = 1,000$		

Table 2: Opinion on math skills.

and the observed values, in relation to the association between liking or not liking the subject and the mathematical abilities perceived by the students themselves.

With reference to the abilities in mathematics perceived by the students, the EGM group classified them as good and excellent, and the CONTROL group, as low and limited. The EGM group also identified math classes as fun, while the CONTROL group expressed, in relation to them, some sacrifice, revealing their lack of motivation. Most of the group of students who do not like mathematics classified their abilities in the subject as being low and limited.

DISCUSSION OF RESULTS

In this study, it was significantly observed that most of the students interviewed like mathematics. About the professors of the discipline, the highest percentage of students who like mathematics (EGM) classified them as great and dynamic, while those who do not like mathematics (CONTROLE) as demanding and bad. Regarding the math discipline, the EGM classified it as important and wonderful, while the CONTROL group as complicated. With reference to their math skills, the EGM group rated them as good and

great; and the CONTROL group, as low and limited. When in math class, the EGM group showed significantly in their responses that they had fun, while the CONTROL group expressed a sense of suffering.

This work corroborates the findings of Hazin et al. (2010), Silva & Teixeira (2008), Chacón (2003), even knowing that the works mentioned above have a similar objective to this study, it seems essential to explain, in this discussion, their methodological similarities and differences.

Hazin et al. (2010) suggests in his research connections between cognitive aspects and affective aspects, linked to self-esteem and school performance related to teaching-learning issues specifically of mathematical content. Results shared by this study, which believes in the contribution of affectivity to cognitive learning and interaction between teacher and student, favoring school success.

The methodology used by Hazin et al. (2010) consisted of the HTP projective technique, with the elaboration of drawings followed by a survey applied to students aged 12 to 14 years, students of the 5th grade of elementary education II of a public school, with a final group of 20 students. Differing from this work that evaluated 48

students aged between 14 and 17 years old, high school students from a full-time state technical school. The instruments used were the Affect-Performance Diagram (DAP) of adapted analysis developed by Silva and Teixeira (2008) the other instrument was a questionnaire composed of 20 questions based on the methodology of Chacón (2003).

This study found that among the total number of students interviewed, more than half expressed a strong liking for mathematics. In the school performance test, with five open questions, students who like mathematics showed a significantly better result when compared to those who do not, and also, students who verbalized liking mathematics showed congruence observed in the percentages of results between the answers categorized and the affirmation in relation to the feeling with the discipline of Mathematics.

In the evaluation regarding the students' opinion, after categorization of the same or similar answers, it was observed that the highest percentage of students who like mathematics attributed to the professors, the mathematics discipline and their own abilities to learn, always confident values, optimistic and/or positive, such as: great, which is synonymous with brilliant and charming, dynamic, which means - bold and active, as well as, important, wonderful and good (Houaiss, 2001; Ferreira, 2000).

Such results can be justified by the arguments of Rogers (2004), who reflects on the investment in the classroom not only from the cognitive aspect, but also from the affective aspect. Favoring interpersonal relationships in the classroom and contributing greatly to the teaching-learning process. At the same time, other issues are addressed by Ausubel (2003), regarding the teacher's practice that facilitates the student's access to knowledge, where he proposes a meaningful learning privileging the previous knowledge within a

cognitive perspective that is the integration of the content learned in a way organized.

CONCLUSIONS

Affectivity integrates our lives, transforms them, gives them meaning and value. For a child or a young person, affectivity is a learning condition, without which the assimilation of knowledge becomes very difficult or even impossible. As stated in the epigraph by António Gedeão (1956), the dream and the affective commitment allow the world to move forward. That is, it is necessary to combine the affective dimension with the cognitive dimension of Man.

In this thematic line, the interconnection between reason and emotion was studied by Wallon (1971), who based his theory on the subject's affective-cognitive-motor integration, highlighting the importance of affectivity and enabling its interference in the teaching-learning process. Accordingly, according to the theories of Piaget (1993), Vygotsky (2001) Freinet (2000) and Wallon (1971), the affective dimension occupies a central place in teaching-learning, in a situation of formal learning at school. One must not forget that all cognition is mediated by affectivity, in order to result in meaningful knowledge.

REFERENCES

- ARANTES, V. A. (2003). *Afetividade na Escola: alternativas teóricas e práticas*. São Paulo: Summus Editorial.
- BERCHT, M. (2001). *Em direção a agentes pedagógicos com dimensões afetivas*. Tese Doutorado em Ciência da Computação. Porto Alegre: UFRGS.
- CHACÓN, I. M. G. (2003). *Matemática emocional*. Porto Alegre: Artmed
- DANTAS, H. (2007). *A afetividade e a construção do sujeito na psicogenética de Wallon*. São Paulo: Summus Editorial.
- DANTAS, H. (1992). *A afetividade e a construção do sujeito na psicogenética de Wallon*. In DE LA TAILLE, ET. AL (1992). *Piaget, Vygotsky, Wallon: teorias psicogenéticas em discussão*. São Paulo: Summus, PP.85-98.
- FERREIRA, A. B. H. (2000). *Mini Aurélio Século XXI Escolar*. Rio de Janeiro: Nova Fronteira.
- FREINET, C. (2000). *Pedagogia do bom senso*. São Paulo: Martins e Fontes.
- HAZIN, I.; FRADE, C. ;Da Rocha Falcão, J.T. (2010). *Autoestima e desempenho escolar em matemática: contribuições teóricas sobre a problematização das relações entre cognição e afetividade*. *Educ. rev.* 36.
- HOUAISS, A. (2001). *Dicionário Houaiss da língua portuguesa*. Rio de Janeiro: Objetiva.
- KEROUAC, G. (1994). *Lesémotions*. In M. Rechele, (Eds.), *Traité de Psychologie Experimentale* (pp.360-374). Paris: PUF.
- KUPER, M. C. M. (2003). *Afetividade e cognição: uma dicotomia em discussão*. São Paulo: Summus.
- MABONEY, A. A., & ALMEIDA, L. R. (2005). *Afetividade e processo ensino-aprendizagem: contribuições de Henri Wallon*. *Psicologia da Educação*, 20 (1), 11-30.
- MIRANDA, E. D. (2008). *A Influência da Relação Professor-Aluno para o Processo de Ensino-Aprendizagem no Contexto Afetividade*. 8º Encontro de Iniciação Científica e 8ª Mostra de Pós- Graduação. Anais, 1-6.
- MORIN, E. (2007) *Os sete saberes necessários à educação do futuro*. São Paulo: Cortez.
- PIAGET, VYGOTSKY, WALLON: *teorias psicogenéticas em discussão*. São Paulo: Summus, pp. 75-84.
- PIAGET, J. (1976). *A equilibração das estruturas cognitivas*. Rio de Janeiro: Zahar
- PIAGET, J. (1993). *Gênese das estruturas lógicas elementares*. Rio de Janeiro: Zahar.
- PIAGET, J. (1975). *A construção do real na criança* (2ª ed.). Rio de Janeiro: Zahar.
- ROGERS, C. (2004). *Terapia Centrada no Cliente*, trad., Lisboa, Moraes Editores.
- RODRIGUES, E. P., & Viana. H. B. (2011). *Afetividade na relação professor-aluno*. *Revista Digital*, 15 (153),
- REGO, T. C. (1997). *Vygotsky: uma perspectiva histórico-cultural da educação* (3ª ed.). Petrópolis: Vozes.
- SILVA, J. B. C., & SCHNEIDER, E. J. (2007). *Aspectos socioafetivos do processo de ensino e aprendizagem*. *Revista de divulgação técnico-científica do ICPG*, 3 (11), 83-87.
- SILVA, C. S. (2009). *Afetividade e cognição: a dicotomia entre o “saber” e o “sentir” na escola*. *Psicologia*, 1-31.
- SILVA, M., & TEIXEIRA, R. (2009). *Diagrama Afeto-Performance (DAP) – uma ferramenta para inclusão da afetividade no processo de ensino-aprendizagem da matemática*. *Revista Zetetike*, 17, (32), 45-62.
- VYGOTSKY, L. S. (2001) *A Construção do pensamento e da linguagem*. São Paulo: Martins Fontes.
- VYGOTSKY, L. S. (2003). *Psicologia pedagógica*. Porto Alegre: Artmed.
- VYGOTSKY, L.S. (1996). *Teoria e método em psicologia*. São Paulo: Martins e Fontes.
- WALLON, H. (1971). *As origens do caráter da criança*. São Paulo: Difusão Europeia do Livro.