

## **Self-Regulation of Learning in Child Education**

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### **Abstract**

*The study on human behavior has attracted several researchers from psychology and education areas, highlighting Albert Bandura with the Social Cognitive Theory. This theory explains the human behavior, starting with an individual and his relations with his context, being able to act intentionally, with anticipation, through self-regulation processes. It is understood that self-regulation of learning may aid in the development of new ways of learning. This article aims to identify promotion factors of self-regulation of learning in children on Child Education level. It is an exploratory and descriptive research, with qualitative approach. The sample was given through convenience criteria involving 239 students and 10 teachers, in Child Education level, in the city of Breves/Pará/Brazil. The results indicated that the earlier self-regulation strategies are introduced in the school life of the individual, from activities involving the children development, greater are the possibilities of success in the school and individual every day.*

**Keywords:** Self-regulation; Learning; Child Education.

### **1. Introduction**

The study on human behavior has been of interest of several scholars of psychology and education, among them highlighting Albert Bandura with Social Cognitive Theory, which explains the human behavior, starting with a particular individual and their relations with the context where he is inserted, where personal, environmental and behavioral factors interact and influence each other bidirectionally (AZZI, 2010). These individuals, each one with their particularities, suffer actions from the environment, but also influence them (AZZI, 2010; TORISU & FERREIRA, 2009).

It is possible to say that human interferences were always noticed in the world, in different times and in different ways, whether structural or cultural. Thus, the subjects live in a dialogic and reciprocal relation with the environment where they are inserted. From this idea, it is said that the subject is an agent, who may influence his own action to produce determined results (BANDURA, 1999). In other words, he has the possibility of influencing circumstantial events and shaping his life (BANDURA, 2000).

The Social Cognitive Theory aids in the comprehension of human behavior subsidized constructs that explain how the relations between subject and environment are done and vice versa. To analyze this process is fundamental in order to understand it, due to its contributions to society (SILVA & LAUTERT, 2010; AZZI, 2014; TORISU & FERREIRA, 2009; JÚNIOR & WINTERSTEIN, 2010).

#### **1.1. Human Agency**

According to Bandura (1999), the agentic functions are intrinsic to human beings, however it is necessary to become aware of such condition in order it will be externalized. The agentic action shapes the development and the functioning of the brain during the entire life course. The cognitive processes are not only emerging cerebral activities; they also exert determining influence.

The human mind is generational, creative, proactive and not only reactive. In order to make a path with success, it is necessary to create possibilities of action. This path is made effective in group with personal, environmental and behavioral factors, which are mutually influenced.

According to the “sociocognitive approach there is no separation between mind and body; the individual is a whole and there are no presupposed dualisms to explain the human behavior (AZZI, 2014, p. 28). Therefore, the idea of agent subject for Bandura (2000) is expressed in the human capacity of interfering in circumstantial events and orienting his life.

To what one perceives the subject agent acts consciously, in other words, underlies an intentionality that precedes the steps, which might come after. However, this is only one of the characteristics of agentic action. According to Azzi (2014), besides intentionality, there are three more fundamental characteristics: anticipatory thinking, self-reactivity and self-reflexivity. They sum, therefore, four essential characteristics that explain such condition of subject agent. That is why there is intentionality as the first characteristic of the subject agent (BANDURA, 2008), because from the objectives aimed plans and strategies of action are organized for its development, which refers to the characteristic of anticipatory thinking of actions (FERNANDEZ, 2015).

The prediction of actions refers to the temporal extension through anticipation of the future with the use of symbolic capacity and this image of what may happen serves as guide and motivator for subsequent actions (AZZI, 2014). Self-reactivity, for its turn, concerns the possibility of turning into reality plans and intentions through self-regulatory processes, namely, the capacity of controlling one’s own actions, monitoring activities and actions in order to achieve the proposed objectives. As for the self-reflexivity, it highlights the metacognition of persons, which is the ability of reflecting on themselves and self-referring evolution of thinking of persons to alter their own way of thinking and behavior (PAJARES, 1996); self-observation makes persons to reflect on themselves, about what they do, about what they believe (BANDURA, 2008; AZZI, 2014).

## 1.2. Self-regulation of Learning

Among personal models, it is highlighted the concept of self-regulation, in which the individual, in conscious and voluntary manner, becomes capable of controlling his actions in search for determined objectives (BANDURA, 2008). It is considered that self-regulation is a fundamental construct in order to explain the human behavior.

Self-regulation is one of the key-concepts in Social Cognitive Theory, it has several explanatory formulations related to procedures “involved in the human possibility to actively self-regulate his own behavior, as part of the process of intervening intentionally in reality” (AZZI & POLYDORO, 2009). Therefore, this “is a conscious and voluntary process of government, by which it is possible to manage one’s own behaviors, thoughts and feelings” (AZZI & POLYDORO, p. 75. 2009), in which a person can contribute intentionally for events and circumstances of her own life, not being only a product of it.

The construct of self-regulation is present in every phase of human development, which, depending on the environment and experiences, will result in processes increasingly improves. In the educational area, self-regulation of learning has been becoming a great feature in what concerns the new demands in ways of developing the learning capacities. This construct is defined as an “active process, in which the subjects establish the objectives that guide their learning, trying to monitor, regulate and control their cognitions and behaviors.” (ROSÁRIO, 2014, p. 37). Therefore, the group of theoretical approaches applied to education is widened, once it involves several aspects, which are necessary to learning in the educational environment (BANDURA, 1986; BORUCHOVITCH, 2014).

Self-regulation of learning refers to a cyclic process, which involves the capacity of the student in planning, monitoring and regulating his own learning process. These aspects “may occur in simultaneous and dynamic manner, in an interaction between different processes and components of the process, of sequential nature and in cyclic way” (ROSÁRIO, NÚÑEZ & GONZÁLES-PIENDA, 2007, p. 22). With the self-regulation of learning the students are encouraged to plan their tasks, to develop the strategies, to monitor the execution and to analyze the results of their efforts in an independent manner and focused on the task (BORUCHOVITCH, 2014; PISCALHO & VEIGA SIMÃO, 2014). It is considered that self-regulation of learning may also be developed with children of Child Education Level. As highlight, for the education of children between 5 and 10 years old, the *Projeto Sarrilhos do Amarelo* was created, idealized by the authors Rosário, Núñez and González-Pienda (2007). It is a project of prevention, which aims to build with preschool children “strategies and processes of self-regulation of learning, equipping them in order to face their activities and tasks with greater quality and depth” (ROSÁRIO, NÚÑEZ & GONZÁLES-PIENDA, 2007, p. 7).

It becomes, therefore, a tool of great importance, in what concerns self-regulation of learning and schooling children in the field of Child Education (ROSÁRIO, NÚÑEZ & GONZÁLEZ-PIENDA, 2007). Therefore, faced with the problematization developed, this article has as objective to identify factors of promotion of self-regulation of learning with children in Child Education Level.

## **2. Methodology**

### **2.1. Nature of the research**

This study is made as an exploratory and descriptive research aiming to find a larger approximation with the object investigated, because, taking in consideration the context of Child Education, it is still little known and explored. The descriptive method nature is justified for the necessity of describing the phenomenon at scrutiny, after the familiarization of the researchers with the same. A choice was made for a quantitative approach having as basis the specificity if the data collected.

### **2.2. Participants**

The sample was taken using the criterion of convenience involving 239 students and 10 teachers from 2 public schools, in Child Education Level, in the city of Breves/Pará/Brazil. 10 classes of Child Education were involved. The following criteria of inclusion were used: (1) for students – to study in pre school, being regular in the school year; (2) for teachers – to be the regent teacher of the class, availability to participate in the research.

The teachers participating in the research were female (100%), in the majority (94%) with more than 8 years as teachers in Child Education, from them 50% has initial formation in the Pedagogy course and the other 50% in the Letters course. It is highlighted that 75% of the teachers involved fulfilled *latu sensu* post graduation courses, while 25% affirmed not to have any kind of post graduation.

### **2.3. Data collection**

The data were collected with the application of 2 instruments, namely: (1) – characterization questionnaire; (2) Checklist of Independent Learning Development – CHILD scale, by Piscalho e Veiga Simão (2014). The characterization questionnaire was applied to the 10 teachers participating in the research in order to gather information on sociodemographic and professional aspects, such as sex, age and time in the job.

The scale for the collection of data with 22 items, referring to the students' self-regulated learning (CHILD). This scale is constituted as an instrument of formation-action-reflection for supporting of the pedagogic practice of teachers that work in Child Education. It is destined to collect information about the teachers' perception on their students' self-regulation, understanding that children in the age group corresponding to pre school (4 to 5 years old) do not have conditions to fulfill the self-evaluation, identifying the elements related to the construct investigated and answering the questions demanded because of their level of complexity, therefore, the instrument was built to be applied to teachers concerning their students.

### **2.4. Data analysis**

The data of quantitative nature were submitted to descriptive statistic with measures of central tendency (median, mode, maximum, minimum, standard deviation) which provide typical scores representing the group and percentage calculations (DANCEY, 2002). For such the software Statistical Package for the Social Sciences – SPSS, version 20, was used.

## **3. Results and Discussions**

The results were constituted taking as basis the calculation of the modes and medians – descriptive statistic (Table 1) – from the teachers' answers, referring to their perceptions about the development of self-regulation of learning in the 239 students involved. The items from the Scale of Checklist of Independent Learning Development were used – SCHILD (Piscalho & Veiga Simão, 2014). It is highlighted that the items of the scale were structured to measure 4 fundamental aspects for the development of self-regulation of learning, namely: (1) **emotional dimension** – “it is expected that they can put off the feeling of gratification without recurring to aggressive behaviors of frustration”; (2) **pro social dimension** – “the children are already able to talk about their mental states and start to develop a more sophisticated comprehension about the thoughts of other people”;

(3) **cognitive control** – “they must be able to resist to distraction, using appropriated and effective strategies, monitoring their progress and, in last case, achieving the objective with success”; (4) **motivation for learning** – it increases progressively as the children achieve success in their activities. “It reaches its peak when the child believes that she is responsible for her actions, that she is able to control them and has power of decision” (Piscalho & Veiga Simão, 2014, p. 173).

**Table 1 – Measures of Central Tendency referring to the perception of teacher towards the self-regulated learning of their students.**

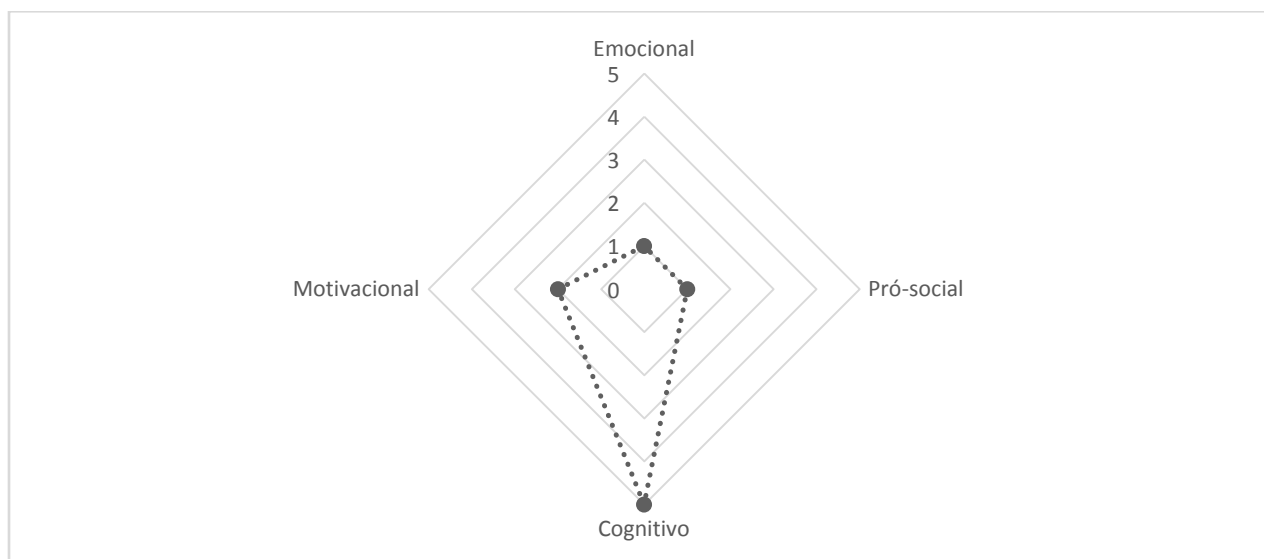
Able To Control Attention And To Resist To Distraction	Negotiates When And How To Execute Tasks	Able To Talk About Activity Planned For The Future	Able To Make Choices And Take Substantiated Decisions	Makes Questions And Suggests Answers	Uses Strategies Previously Taught	Adopts Language Tha Heard Previously To Own Use	Plans Own Tasks Objectives, And Goals	Enjoys Solving Problems
Median	3,00	3,00	3,00	3,00	3,00	2,00	3,00	3,00
Mode	3	3	3	3	3	3	3	3
Standard Deviation	,879	,912	,941	,841	,952	,763	,924	,789
Variance	,773	,831	,885	,707	,906	,582	,855	,623

Table 1 presents the results of descriptive statistic referring to the data collected using the Scale of Checklist of Independent Learning Development were used – SCHILD by Piscalho e Veiga Simão (2014). In order to better understand the results, it is important to emphasize that this scale has the following intervals and numeric relations, namely: 1 – always; 2 – usually; 3 – occasionally; 4 – never. Therefore, the closer the score to the value of 4, less frequently certain behavior or profile was identified by teachers in the study routine of their students.

A choice was made for exploring, initially, the less frequent self-regulatory aspects in the behaviors of the 239 students involved in the research, taking as point of cut the scores = or > than 3. It was defined the application of statistic measure of central tendency **Mode** to identify the more repeated values, of higher frequency in the data base in support to the **Median** statistic.

In general, 40% of the 22 items of the scale were more frequently associated to a behavior that happens “occasionally”. It is understood that these are not usual behaviors, they refer to factor, which need to be strengthened so that the self-regulation learning in this level of education, with the selected sample, may happen effectively. Analyzing the results of Mode by dimension in the Scale of Checklist of Independent Learning Development were used – SCHILD, with the cutting point defined, it was also possible to identify which dimensions have items that suggest less frequent behavior in the children (GRAPHIC 1).

**GRAPHIC 1 – prevalence of behaviors that happen “occasionally” for dimension of SCHILD.**



Observing the Graphic 1 it is possible to notice that the incidence of behaviors happening “occasionally” is more predominant in the dimension related to cognitive aspects. In the Scale of Checklist of Independent Learning Development were used – SCHILD such dimension is composed of 7 items, from which 5 happen only occasionally, namely: (1) being able to talk about activities planned for the future; (2) being able to make choices and taking substantiated decisions; (3) asks questions and suggests answers; (4) uses strategies previously taught; (5) adopts language previously heard for own use.

The other dimensions of instruments (emotional, pro social and motivational) reached frequencies of 1 to 2 items related to behaviors that happen “occasionally”. It is highlighted that there were not identified behaviors from SCHILD that were never noticed by the teachers in the school routine. Hence, it is noted that in the sample applied to this study, the cognitive dimension is the one that needs to be better developed by the children for the constitution of a self-regulated learning. It is understood that even though they are younger children (4 and 5 years old) it is possible to develop the capacity of self-regulating the learning, being primordial the teachers’ acting in the intentional promotion of specific competences in this process, having as aim to build the autonomy of the children, not only in what concerns immediate results, but also thinking in a future learning (PISCALHO and VEIGA SIMÃO, 2014).

It is considered that for such it is necessary to aid the children, since the pre school context, “to develop the intellectual tools and the necessary strategies to learn in autonomous manner to control their learning, to monitor their advances (PISCALHO and VEIGA SIMÃO, 2014, p. 172). For Rosário and Polydoro (2014, p. 19), “the self-regulation of learning assumes a dynamic model of acquiring knowledge, in which there is interaction of the student’s cognitive, motivational and emotional resources”. Thus, it is a multidimensional concept that parts from the assumption that the student develops a very active participation in his process of learning, and basically involves the student’s capacity of being self-accountable for his own process of learning. (BORUCHOVITCH, 2014).

Therefore, the development of the four dimensions from SCHILD points to a wide and multidimensional development in children from Child Education Level, serving as indicatives for teachers to plan strategies of teaching aiming the construction of the child autonomy applied to learning. According to Rosário and Polydoro (2014, p. 20) “the students, who self-regulate their learning monitor their behavior, directing it towards their objectives and reflect about their progress”. Such fact makes the student to become able to achieve his personal satisfaction and to become increasingly excellent in his method of learning, being led to have a good perspective in what concerns his future (ROSÁRIO & POLYDORO, 2014).

Gradually, learning has been becoming an activity by which the own apprentice gets more and more responsible, in proactive manner, ceasing to be just a response that must be given to the learning environment, such context is no different with students from Child Education, respecting their levels of development and maturation. The individuals that are able to self-regulate their learning may become more efficient in the process of learning, given that they can develop a clearer consciousness of their limitations and capacities, because their actions and strategies are directed by pre established goals, which might contribute to the achievement of good results (ROSÁRIO & POLYDORO, 2014).

Considering the context of Child Education, the self-regulatory characteristics must be built progressively in the school routine, through different activities that involve the integral development of the child. These activities might be planned considering the strong and weak points identified with the aid of the SCHILD. In the case of the sample investigated here, the most fragile points for children to self-regulate their own learning are the ones related to cognitive aspects, which converge to the focus at the time of developing certain activity, as well as for the creation of strategies of learning and monitoring of the progress, with self-evaluative process.

#### **4. Final Considerations**

Self-regulation of learning is a construct that might be developed in the human being starting with the elements of the everyday for the adjustment and incorporation with the aim directed to pre determined objectives. This way, the earlier the self-regulation of learning is introduced in the life of a child in Child Education Level, bigger will be the possibilities of this individual to control and regulate his daily and academic actions, therefore propitiating a much more significant learning for this child.

From this idea, dealing with children, for the development of their self-regulation of learning is indispensable so that it becomes possible to achieve success in studies and consequently at life in general. With this motivator in mind, the authors turned their investigative look to schools with Child Education, to introduce activities that could aid in the development of such construct.

Despite the result being positive in what concerns the possibility of fulfillment of self-regulation of learning in Child Education Level and its benefits for the learning process of small children, it is necessary to increase the number of researches directed to this construct with children in this level of education, for the scarce literature shows how little it has been discussed about the fact. Besides that, it is necessary to wide the work to a greater number of classes, in public and private schools so that it is possible expand the knowledge about the development of this construct in children and, also studies that can follow the children, who were submitted to the intervention, in order to have a wider idea about how this process is made, until which point it is effective, which is the motivator, how it influences the children's lives, in their process of learning and their relations in the class.

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