



Revista  
de Psicologia

ISSN 2179-1740

## THE PILLARS OF RESILIENCE OBSERVED IN PSYCHOMOTOR PRACTICE

*OS PILARES DA RESILIÊNCIA OBSERVADOS NA PRÁTICA  
PSICOMOTORA*

Alexandra Moreno<sup>1</sup>

Crescencia Pastor<sup>2</sup>

Maria Teresa Anguera<sup>3</sup>

### Resumo

Neste artigo, descrevemos um estudo em que a observação sistemática foi utilizada para investigar a promoção da resiliência na prática psicomotora. O trabalho faz parte de um estudo maior intitulado "A promoção da resiliência no vínculo estabelecido entre adolescentes e educadores" (<http://hdl.handle.net/10803/96515>) tese apoiada em aspectos teóricos e práticos da resiliência analisados no contexto de uma relação formada entre um pequeno grupo de adolescentes e seu psicoterapeuta. Descrevemos uma abordagem metodológica inovadora que envolveu a construção de um instrumento de observação ad hoc para analisar a promoção dos pilares de resiliência dentro de uma série de sessões da prática psicomotora.

**Palavras-chave:** Observação sistemática; pilares de resiliência; psicomotricidade.

### Abstract

In this paper, we describe a study in which systematic observation was used to investigate the promotion of resilience in psychomotor practice. The work is part of a larger study titled "The promotion of resilience in the established bond between adolescents and educators" (<http://hdl.handle.net/10803/96515>) of theoretical and practical aspects of resilience analyzed within the context of the relationship formed between a small group of adolescents and their psychomotor therapist. We describe an innovative methodological approach that involved the construction of an ad hoc observation instrument to analyze the promotion of pillars of resilience within a series of psychomotor practice sessions.

**Keywords:** Systematic observation; pillars of resilience; psychomotor practice

<sup>1</sup> Methods of Research and Diagnosis in Education Department . University of Barcelona., Spain e-mail:edpsicomotriu@gmail.com

<sup>2</sup> Methods of Research and Diagnosis in Education Department,. Research Group Interventions in Children and Youth (GRISIJ). University of Barcelona, Spain, e-mail: cpastor@ub.edu

<sup>3</sup> Methodology of Behavioral Sciences Department, Faculty of Psychology, IR3C Research Institute, University of Barcelona, Spain, e-mail:mtanguera@gmail.com; tanguera@ub.edu

## INTRODUCTION

This study analyzes resilience from the perspective of the relationship established between adolescents and therapists in psychomotor education.

We chose to study psychomotor practice as it is an educational and therapeutic approach that uses play and body movement to promote closer contact and interaction between adolescents and adults. The study was conducted in a group of adolescents with diverse risk factors that can lead to a lack of self-confidence and sense of identity and social belonging. These difficulties can on occasions interfere with the adolescent's ability to interact with others and their environment, and bring them to seek emotional and psychological support outside their natural environment, for example, at an educational or social care institution.

In this study, psychomotor practice helps adolescents to be understood and offers them a chance—and a right—to engage in enjoyable activities and to speak and be heard. It involves working on social, affective, and emotional issues based on life experiences to motivate and instill in participants a desire to learn new academic concepts and improve social skills. The success of the approach hinges on evaluating, learning to understand, and boosting the self-confidence of adolescents who are conflictive at school or at home in order to give them the opportunity to change their attitudes, learn to fit better into groups, and take a better outlook on life.

To study the relationship between adolescents and educators, it is necessary to bring to the surface the dialogue established between the adolescent's emotional needs—reflected by behaviors—and the attitude of the educator in given situations. It is also necessary to observe, analyze, and detect resilience factors that emerge from this relationship. In this process, it is evident that the results obtained represent the introduction of an innovative method, based on observation, the therapeutic relationship and the analysis of the pillars of resilience. According to this research, such analysis was a secondary action of this trajectory, the observational methodology used allowed the study of introspection, independence, ability to relate, initiative, sense of humor, creativity, morality and of consistent self-esteem, aspects considered the pillars of resilience.

In our experience, the above relationship can be systematically observed in psychomotor education sessions, which provide an amenable, fun environment in which the adolescent is free to act and express him or herself while accompanied closely by the therapist. The therapists are the self-monitoring component of the process, but at the same time, they are also the

adolescent's playmate.

The aim of this study was to observe and study the promotion of pillars of resilience in a dynamic psychomotor education setting using a systematized approach that can be performed by other researchers and professionals.

### The pillars of resilience

To understand the foundations underlying resilience, which is a broad and complex concept, it is necessary to consider the full history behind its conceptualization (Antonovsky, 1979; Werner & Smith, 1992; Bernard, 1999; Kaplan, 1999). We have formulated our own concept of resilience based on our research:

Resilience is a dynamic process based on our ability to move forward and overcome and understand traumatic, conflictive, and stressful situations. Resilience is the ability to laugh at oneself without losing the hope of being happy one day. Resilience is believing in the meaning of life and using our creative abilities to resolve problems that emerge every day (Moreno 2011:67).

The present study was conducted within the framework of a psychomotor education program aimed in promoting resilience among adolescents. We considered the following pillars of resilience, which are described in detail below within the context of this field.

a) Introspection. Introspection is the ability to ask oneself questions and give an honest answer. It involves raising questions and expecting a sincere answer based on the affective relationship one has with oneself (Melillo, Estamatti & Cuestas 2002). While the term *introspection* is not explicitly mentioned in psychomotor practice, Aucouturier (2004), throughout his work on the theoretical framework of this approach, refers to the power of decentralization, a concept related to Jean Piaget's views of egocentrism. Decentralization refers to a progressive thought process that enables people to establish more objective relationships with things, other people, and themselves.

b) Independence. Independence refers to a person's knowing how to establish boundaries between themselves and their environment. It involves maintaining an emotional and physical distance without falling into isolation; it is the ability to judge an external situation without being influenced by the wishes of others, thereby avoiding distortion of the situation (Melillo, Estamatti & Cuesta, 2002). Aucouturier (2004) explains that one of the benefits of decentration is that it allows children to become aware of their body and thereby separate their actions from those of others. Games that challenge children in terms of the use of their body build confidence and independence. In other words, a child that seeks to be independent takes



pleasure in jumping, falling, turning, flipping, and creating obstacles that can be overcome by manipulating their body. The theory is that independence is created by challenging one's limits in a process where the person learns to control themselves and evaluate the situation.

c) Ability for relationships. Ability for relationships means being able to build relations with other people with the aim of bridging affective gaps through an attitude of willingness to be in and enjoy the company of others. It is a basic human need that emerges from a person's affective state and brings him/her to seek, in another person, a way of feeling alive and present in the world (Melillo, Estamatti & Cuesta, 2002). Motor expressivity tasks in psychomotor practice focus on the pleasure a person can feel by being themselves, autonomous, willing to discover the world around them, feeling free, and being open to meeting other people and to express and communicate well-being through sharing (Aucouturier, 2004; Lapiere, 1985).

d) Initiative. Initiative refers to the pleasure derived from placing demands on and testing oneself in trying situations. It means trusting oneself and believing in what is being done (Melillo, Estamatti & Cuesta, 2002). Aucouturier (2004) talks about how children's creative abilities bring about a sense of fascination with their existence in the world. Constructions made from mattresses or different sized blocks reflect the ability to take initiative in play.

e) Sense of humor. Having a sense of humor in resilience means being able to laugh at one self in adverse situations. It is laughing in the face of tragedy. It is an unconscious way of momentarily separating oneself from the logic of thought through comical or creative release. It is the ability to transform suffering into pleasure (Melillo, Estamatti & Cuesta, 2002). Vanistendael (2004) holds that constructive humor builds relations in that it opens up other dimensions of life that take a person beyond their immediate reality and at the same time deepen the person's experiences and strengthen existing relationships. Play is viewed as a strategy for stimulating humor within the cultural context. Destructive humor (irony and sarcasm), by contrast, is considered to fracture relationships and create exclusion. Play is an essential part of psychomotor practice and allows participants to find pleasure in what they are doing. Aucouturier (2004) talks about the different pleasures expressed by individuals who are free to experience their body by playing with time and space: the pleasure of standing, the pleasure of falling, the pleasure of running, the pleasure of swinging, the pleasure of jumping, the pleasure of twisting, the pleasure of giving and keeping, the pleasure of communicating, the pleasure of thinking, the pleasure of

creating. The basis of laughter therapy (Castellví, 2007) is that stimulating humor favors good health. Laughing releases endorphins or "happiness drugs", which are chemical substances that act as neurotransmitters.

f) Creativity. Creativity is the ability to transform chaos into order and beauty; it is the ability to reflect about yourself, to think about your thoughts and generate concepts and hypotheses, assess situations and possible actions, and discover how you can make the most of what is around you. A person's creative capacity evolves as the person develops. Play is the main source of creativity in children, as it links reality to fantasy through the manipulation of objects (Melillo, Estamatti and Cuesta, 2002). Aucouturier (2004) talks about how the pleasure of creating takes the child to a state of intense self-absorption. Within this creative process in psychomotor education, apart from using different materials (earth, sand, water, paint, wood, paper, cloth, metal, cups, cushions, pieces of toys, recyclable material, etc.), the child benefits from a reduction in muscle tension.

g) Morality. Morality is understood as the extension of one's personal desire for well-being to those around him or her. It is represented by values that influence the development of respect for oneself and for others. This value system is composed of the conscious or unconscious internalization of norms that determine what can and what cannot be done (Melillo, Estamatti & Cuesta, 2002). Ability for decentration appears again in the field of psychomotor practice. Aucouturier (2004) states that through decentration, children become capable of considering the presence of another person and of respecting and listening to them by becoming aware of how they themselves are acting or moving.

h) Consistent self-esteem. Consistent self-esteem is at the root of all the other pillars of resilience. It is the affective care generated by a close bond between the child or adolescent and the role-model adult (mother, father, sibling, educator, career). Consistent self-esteem was proposed as an additional pillar of resilience by Melillo, Estamatti and Cuesta (2002) based a study on the psychological foundations of resilience published in Melillo and Suarez Ojeda (2002). In psychomotor practice, self-esteem is worked on through attitudes in play. The person's potential is valued and this promotes interpersonal communication. Self-esteem means being aware of one's existence, of one's image (Aucouturier, 2004).

Following on from the work of Fergus and Zimmerman (2005) and Garcia and Díaz (2007), we propose a new dimension: self-monitoring.

i) Self-monitoring: The concept of self-monitoring emerged from the experiments of Skinner and Pavlov (Pantoja, 1986; Bandura, 1982, 1977). Who showed

how humans were capable of applying different techniques to modify their actions and to quickly and efficiently adopt a suitable behavior. Self-monitoring, self-control, and autonomy contribute to independence in the face of adverse situations. The process of self-monitoring is observable through language, discourse, and words expressed by the participant in such studies (Pantoja, 1986; Bandura, 1982, 1977). In the observed process, resilience is fostered through the bond established between the adolescent and the therapist.

Promotion of resilience can be detected through changes in attitudes that are observable in different dimensions, namely motor expressivity, ability for relationships, relationship with adults, emotional expressivity, relationship with objects, verbal representation, and relationship with time and space. These dimensions are covered by the three macrocriteria that form the observation instrument used in the present study. The first macrocriterion was designed to observe adolescents during the psychomotor practice sessions; the second macrocriterion was formed by the pillars of resilience considered in the instrument; and the third macrocriterion was used to analyze the role of the therapist during the sessions through observation of actions and dimensions that correspond to different levels of response.

The main aim of this study was to design an *ad hoc*, i.e. purpose-designed, observation instrument to analyze, within the framework of an empirical study, the promotion of resilience in psychomotor practice.

**METHODOLOGICAL DESIGN**

We employed an observational methodology design, as this approach is well suited to studies analyzing the spontaneous, habitual, and perceptible behaviors and actions that characterize resilience in the context of psychomotor practice.

Analyzing the process by which resilience is promoted in psychomotor education requires a highly flexible approach applied in a natural setting. The process is unquestionably complex and would benefit from both qualitative and quantitative evaluation (Anguera 1979, 2003a, 2003b, 2007; Hernández-Mendo & Anguera 2002; Arana, Lapresa, Anguera & Garzón, 2013; Sánchez-Algarra & Anguera 2013;) within an integrated mixed-methods approach (Onwuegbuzie, Johnson & Collins, 2001; Onwuegbuzie, 2003; Onwuegbuzie & Leech, 2005, 2007a, 2007b), that combines the complementary strengths of qualitative and quantitative research.

The use of observational methodology to analyze

spontaneous behavior has become increasingly common in a wide range of settings, including educational contexts, in recent years. The rigor and flexibility that characterize this approach offer consistency for the analysis of the different situations that arise during the investigation process (Castañer, Camerino, Anguera & Jonsson, 2011).

The observational design employed was follow-up/idiographic/multidimensional (Anguera, Blanco-Villaseñor & Losada 2001; Anguera 2003b). It was follow-up because we performed both intersessional and intrasessional monitoring of behaviors and actions during a series of psychomotor education sessions to analyze the relationship and interactions between adolescents and the psychomotor therapist. It was idiographic because the target group was a small group of adolescents considered as a unit and because peer interaction contributes to social harmony and educational, social, and psychological development. Finally, the design was considered multidimensional because various dimensions of the relationship between the therapist and the adolescents were analyzed.

**Ad hoc observation instrument**

The behaviors observed were bidirectional verbal and non-verbal behaviors that emerged between the adolescents and the therapist during the psychomotor practice sessions (Weick 1968; Castañer, Camerino, Anguera & Jonsson, 2011).

The observation instrument was purpose-designed to meet the study needs as closely as possible (Anguera 2003a, 2003b).

The instrument was composed of field formats (Anguera, Magnusson, & Jonsson, 2007), as the aim of the study was to analyze the relationship between the adolescents and the therapist and the results of this relationship in the context of the promotion of resilience. The field format system is a flexible, adaptable system that was composed of three independent modules known as macrocriteria that corresponded to the dimensions of the observational design. Each microcriterion was composed of a set of criteria, which, in turn, were broken down into a set of coded behaviors.

Macroriterion 1 corresponded to the actions of the adolescents during the psychomotor sessions; the dimensions were selected based on the psychomotor observation cards designed by Sanchez and Llorca (2008). Macroriterion 2 addressed pillars of resilience extracted from the psychomotor project designed for this study. Macroriterion 3 addressed attitudes and actions displayed by psychomotor therapists and also included dimensions described by Sánchez and Llorca (2008).

In this article our intention is to highlight the



content addressed in macrocriterion 2 which deals with two pillars of resilience: introspection, independence, initiative, humor, creativity, morality, consistent self-esteem, self-monitoring. (Table 1)

## Participants

The study was conducted at the Don Bosco social service center for children and adolescents in Barcelona, Spain. There were 13 participants divided into two groups: Group A, formed by 7 adolescents and used for data recording and analysis (10 sessions recorded), and group B, formed by 6 adolescents and used to pilot the *ad hoc* instrument (single-session recording and analysis). Informed consent was obtained from all participants in the study.

Based on the resilience studies the group highlighted the risk factors and protective factors of process participants (Rutter, 1990).

## Risk factors

Breakdown of the nuclear family; lack of adult role models in the nuclear family; lack of communication and dialogue in the nuclear family; manifestations of behavioral disorders (food disorders, hyperactivity attention deficit disorder, delayed emotional maturity, psychotic manifestations, depression, and rejection); health problems (diabetes, allergy, food intolerance); learning difficulties; difficulties adapting to the school environment; lack of interest in school work; aggression; contact with drugs outside the center (cigarettes, alcohol, joints, marijuana); contact with Latino gangs outside the center; and sexual abuse in childhood or puberty

## Protective factors

Attendance at the center from a young age, leading to the assimilation of educational concepts and values that contribute to favorable development; socioeconomic conditions in the family that guarantee basic resources (housing, hygiene, medical care, clothes, books, food, electronic devices such as mobile phones, computers, games); recognition of the importance of learning, studying, and school even though the adolescent does not feel part of this environment; in the case of adolescents from other cultures (immigrants or children of immigrants), good integration with Spanish adolescents; openness to communication and dialogue; friendly nature and sense of humor; respect for educators and adults; display of affection and close contact with the educators at the center.

## Data recording and analysis instruments

The observational data sets were analyzed using the software program *SDIS-GSEQ, version 4.1.3* (Bakeman & Quera, 1996). *The data type selected was multievent sequences as the data generated by the observation unit were of a concurrent, event-based nature (Bakeman, 1978). The resulting data files were formed by a matrix of codes arranged in columns (subcriteria) and rows (observation units).*

## RESULTS

The data obtained during the recording sessions were analyzed quantitatively. The data were analyzed by log sequential analysis, a technique that is widely used in observational methodology (Arana, Lapresa, Anguera, and Garzón, 2013; Castañer, Camerino, Anguera, and Jonsson, 2013).

Log sequential analysis involves proposing a given or criterion behavior—hypothesized as the origin of the behavioral pattern(s)—and a conditional behavior (or behaviors)—hypothesized to be more strongly associated with the criterion behavior(s) than would be expected by chance. The technique enables the detection of behavioral patterns at different time lags that reveal sequential patterns involving criterion and conditional events. Conditional and non-conditional probabilities related to the behaviors are calculated and analyzed using a binomial test of significance; the results are reported as Haberman adjusted residuals, with significance set at  $>1.96$  (p)

Table 2 shows the data corresponding to the calculations for macrocriterion 2 (pillars of resilience) from the pilot test (observation of group B). (Table 2)

The results of the lag sequential analysis are summarized below:

a) Certain dyads are repeated that reveal characteristic aspects of the process.

b) In the macrocriteria analyzed, the subcriteria were interrelated at different moments, and the order of the dyads changed, i.e. the codes corresponding to criterion behaviors (causes) became conditional codes (effects), and the conditional codes became criterion codes. This reflects the dynamic nature of the process analyzed (Castañer, Camerino, Anguera & Jonsson, 2011).

c) The similarity between the criteria in the different macrocriteria highlights the intersection between studies of psychomotor practice and resilience.

d) Emotional instability and dependence on the adult led the therapist to provide the group with greater autonomy, leading to the creation of constructions



reflecting initiative and creativity, two pillars of resilience.

e) When the participants exhibited an ability to listen and a need for dialogue, the therapist stopped, observed, and intervened by approaching the participants demanding attention. The result was the use of the “thinking corner” and the expression of concepts and values, which are aspects of introspection and morality (Melillo, Estamatti & Cuesta, 2002; Aucouturier, 2004).

f) The display of emotional sensitivity and affection led the therapist to use consensus as a strategy for favoring the expression of ideas. The result was autonomy in play and funny gestures, which are aspects of independence and sense of humor.

g) Emotional stability and the need to be heard led the therapist to make intensive use of the material available, thereby promoting the release of emotions and verbal expression. The result was respect for others during play and self-control in the play area, both aspects of morality and self-monitoring (Pantoja 1986; Bandura 1982).

## DISCUSSION

In this study we have shown how systematic observation involving the use of an *ad hoc* observation instrument can be used to investigate resilience in the context of psychomotor education.

The study is innovative in that it uses an *ad hoc* observation instrument composed of three macrocriteria designed to capture the relationship formed between adolescents and a therapist during psychomotor sessions designed to promote pillars of resilience. In our review of the literature, we did not find any studies of resilience based on lag sequential analysis. In this observational methodology study, like Hernández-Mendo and Anguera (2002), we used lag sequential analysis, although there are other options (Johnston, 2009; Tomkins & Tunnicliffe, 2001; Taber, 1992; Kassim, & Maskill, 1990; Ash, Crain, Brandt, Loomis, Wheaton, & Bennett, 2007; Treagust, Duit, Joslin & Lindauer, 1992). The design chosen was suited to the context of our study. The procedure was highly effective and enabled the capture and analysis of as much information as possible. The use of a purpose-designed observation instrument composed of three microcriteria combined with the sequence analysis program GSEQ 4.1.3. generated both qualitative and quantitative data, thus ensuring the efficacy of the research process. Our results are consistent with those reported by Sánchez-Algarra and Anguera (2013), Anguera, Magnusson, and Jonsson (2007), and Hernández-Mendo and Anguera (2002).

The research design met the goals of the study and demonstrated the value of a systematic observational methodology design built on existing knowledge of resilience and psychomotor practice. Certain studies of therapeutic interventions are limited by the use of methods that are not capable of capturing the full extent—or moment of occurrence—of behaviors and events witnessed by a researcher. An *ad hoc* instrument such as the one we have described permits the qualitative and quantitative analysis of aspects that are visible to participants in a process but that have been largely ignored or deemed non-significant in previous studies.

We have demonstrated the feasibility and value of conducting an investigation rooted in observational methodology in a field that has been explored only minimally due to methodological limitations.

## CONCLUSIONS

We have described an innovative method for analyzing pillars of resilience observed within the relationship established between a small group of adolescents and their therapist in a series of psychomotor practice sessions.

The study was possible thanks to the application of novel methodological techniques that included the construction of an *ad hoc* observation instrument designed to overcome the difficulties associated with efficiently analyzing subjective data that emerge in natural settings. Our approach allowed us to detect the promotion of resilience through play, the actions of a psychomotor therapist, and the verbal and physical responses and attitudes displayed by the adolescents.

In a research environment driven by the pursuit of excellence, the pressure to deliver results, and the need for efficient and effective technological solutions, having the freedom to develop and fine-tune an instrument to meet research needs that cannot be fully met by traditional methodological approaches is a good way forward.

## References

- Anguera, M.T. (1979). Observational Typology. *Qual. Quant.* 13 (6), 449-484.
- Anguera, M.T. (2003a). Observational Methods (General). In: Fernández-Ballesteros, R. (Ed.), *Encyclopedia of Psychological Assessment*, Vol. 2 (pp. 632-637). London: Sage.
- Anguera, M. T. (2003b). La observación. In: C. Moreno Rosset (Ed.), *Evaluación psicológica: Concepto,*

proceso y aplicación en las áreas del desarrollo y de la inteligencia, pp 271-308. Madrid, Sanz y Torres.

Anguera, M. T., Blanco, A., Losada J. L. (2001). Diseños observacionales, cuestión clave en el proceso de Metodología Observacional. Metodología de las Ciencias del Comportamiento, 3, 135-161.

Anguera, M. T., Magnusson M., Jonsson G. K. (2007). Instrumentos no estándar: planteamiento, desarrollo y posibilidades. Revista Avances en Medición, 5, 63-82.

Antonovsky, A. (1979). Health, stress, and coping: News perspectives on mental and physical well-being. San Francisco: Jossey Bass.

Arana, J., Lapresa, D., Anguera, M.T., Garzón, B. (2013). Adapting football to the child: an application of the logistic regression model in observational methodology. Qual. Quan. 47(6), 3473-3480.

Ash, D., Crain, R., Brandt, C., Loomis, M., Wheaton, M. & Bennett, C. Talk, tools, and tensions (2007). Observing biological talk over time. International Journal of Science Education, 29 (12), 1581-1602.

Aucouturier, B. (2004). Los fantasmas de acción y la práctica psicomotriz. Barcelona, Graó.

Bandura, A. (1977). Self-Efficiency: toward a Unifying Theory of behavioural Change. Psychological Review, 84, 191-215.

Bandura, A. (1982): Teoría del Aprendizaje Social. Madrid, Espasa Universitaria.

Bakeman, R. (1978). Untangling streams of behavior: Sequential analysis of observation data. In: Sackett, G.P. (Ed.) Observing Behavior, Vol. 2: Data collection and analysis methods, pp. 63-78. Baltimore: University of Park Press.

Bakeman, R., Quera, V. (1996). Análisis de la interacción: Análisis secuencial con SDIS y GSEQ. Madrid, Ra-Ma. .

Bernard, B. (1999). Applications of resilience: Possibilities and promise. In: Glantz, M. & J. Jonson. Resilience and Development: Positive Life Adaptations. Nueva York: Plenum Publishers, 269-277.

Castañer, M., Camerino, O. , Anguera. M.T., Jonsson,

G. (2011). Kinesics and proxemics communication and novice PE teachers. Qual. Quant.47(4), 1813-1829.

Castellví, E. (2007). El taller de la risa. Barcelona, Alba Editorial

Fergus, S., Zimmerman, M. A. (2005). Adolescent resilience: A framework for Understanding Healthy Development in the Face of Risk. Annual Review of Public Health, 26, 399-419

García, J. A., Dias, P. (2007). Análisis relacional entre los factores de protección, resiliencia, autorregulación y consumo de drogas. Revista Salud y Drogas, 7(2), 309-332.

Hernández-Mendo, A., Anguera, M.T. (2002). Behavioral structure in sociomotors sports: Roller-Hockey. Qual. Quant., 36, 347-378

Johnston, J.S. (2009). What does the skill of observation look like in young children? International Journal of Science Education, 31(18), 2511-2525.

Kaplan, H. (1999). Toward an understanding of resilience: critical review of definitions and models. In: Glantz, M. & Jonson, J. Resilience and development: positive life adaptations. New York: Plenum Publishers, 17-84.

Kassim, A.H. & Maskill, R. (1990). Problems in the descriptive observation of concept teaching in science classrooms. International Journal of Science Education, 12(2), 157-166 .

Lapierre, A., Lapierre, A. (1985). El adulto frente al niño. Barcelona, Científico Médico.

Melillo, A., Suárez Ojeda, N. (2002). Resiliencia: descubriendo las propias fortalezas. Buenos Aires, Paidós.

Melillo, A., Estamatti, M., Cuesta, A. (2002). Algunos fundamentos psicológicos del concepto de resiliencia. In: Melillo, A., Suárez Ojeda, N. Resiliencia: descubriendo las propias fortalezas. Buenos Aires, Paidós.

Moreno, A. (2011). *La promoción de la resiliencia en el vínculo establecido entre adolescentes y educadores en la práctica psicomotriz educativa*. Tesis doctoral. Barcelona: Universidad de Barcelona.

Onwuegbuzie, A.J. (2003). Effect Sizes in Qualitative Research: A Prolegomenon. *Qual. Quant.* 37, 393-409.

Onwuegbuzie, A.J., Johnson, R.B., Collins, K. (2001). Assessing legitimation in mixed research: a new framework. *Qual. Quant.* 45, 1253-1271.

Onwuegbuzie, A.J., Leech, N. L. (2005). Taking the "Q" Out of Research: Teaching Research Methodology courses Without the Divide Between Quantitative and Qualitative Paradigms. *Qual. Quant.* 39, 267-296.

Onwuegbuzie, A.J., Leech, N.L. (2007a). A Call for Qualitative Power Analyses. *Qual. Quant.* 41, 105-121 .

Onwuegbuzie, A.J., Leech, N.L. (2007b). Validity and Qualitative Research: An Oxymoron? *Qual. Quant.* 41,233-249.

Pantoja, L. (1986). La autorregulación científica de la conducta. Bilbao, Universidad de Deusto.

Rutter, M. (1990). Psychosocial resilience and protective mechanisms. In: Rolf, J., Cicchetti, D., Nuechterlein, K. & Weintraub, S. *Risks and protective factors en the development of psychopathology.* New York: Cambridge University Press.

Sánchez-Algarra, P., Anguera, M.T. (2013). Qualitative/quantitative integration in the inductiveobservational study of interactive behaviour: impact of recording and coding among predominating perspectives. *Qual. Quant.* 47(2), 1237-1257.

Sánchez Rodriguez, J., Llorca Llinares, M. (2008). *Recursos y estrategias en psicomotricidad.* Málaga, Algibe.

Suárez Ojeda, N. (2004). Resiliencia: proceso de superación de la adversidad. Available: en:nezit.com.ar ( october 15, 2006).

Taber, K.S. (1992). Girls' interactions with teachers in mixed physics classes: results of classroom observation. *International Journal of Science Education*, 14(2), 163-180.

Tomkins, S.P. & Tunnicliffe, S.D. (2001). Looking for ideas: Observation, interpretation and hypothesis -making by 12-year-old pupils undertaking science investigations. *International Journal of Science Education*, 23(8), 791-813.

Treagust, D.F., Duit, R., Joslin, P. & Lindauer, I. ( 1992). Science teachers' use of analogies: Observations from classroom practice. *International Journal of Science Education*, 14(4), 413-422.

Weick, K. E. (1968). Systematic observational methods. In: G. Lindzey, E. Aronson (Eds.). *Handbook Social Psychology*, pp. 357-451, Vol. II. Reading, Mass, Adison-Wesley.

Werner, E., Smith, R. (1992). *Overcoming the odds: high risk children from birth to adulthood.* Cornell University Press.

Vanistendael, S. (2004). Humor y resiliencia: la sonrisa que da vida. In: Cyrulnik, B., Tomkiewicz, S., Guérnard, T., Vanistendael, S.&Manciaux, M. *El realismo de la esperanza.* Barcelona, Gedisa.

**Lista de Tabelas**

Table 1 - Ad hoc field format observation instrument. Macrocriterion 2

Table 2. - Sequential lag analysis.





Table 1 - Ad hoc field format observation instrument.

Macroriterion 2

<p><b>Macroriterion 2</b></p> <p><b>Introspection C09</b>                  Uses thinking corner C091                  Evaluates one’s attitudes C092                  Observes others playing C093</p> <p><b>Independence C010</b>                  Challenges one’s limits through play C0101                  Displays autonomy during play C0102</p> <p><b>Initiative C011</b>                  Proposes play C0111                  Makes constructions C0112</p> <p><b>Humor C012</b>                  Displays happiness C0121                  Makes comical gestures C0122</p> <p><b>Creativity C013</b>                  Handles objects C0131                  Builds constructions C0112</p> <p><b>Morality C014</b>                  Expresses concepts and values C0141                  Displays respect for others in play C0142</p> <p><b>Consistent self-esteem C015</b>                  Is encouraged to react during play C0151                  Displays frustration in play area C0152                  Demonstrates self-confidence through words or attitudes C0153</p> <p><b>Self-monitoring C016</b>                  Displays self-control in play area C0161                  Displays ability for self-evaluation C0162                  Displays ability for self-reinforcement C0163</p>
---

Table 2. - Sequential lag analysis.

Criterion behaviors	Adjusted residuals (lag 0)		
	Conditional behaviors		
	C0142	C0161	C0153
C093	2.00	-1.15	-0.67
C0101	0.00	0.00	0.00
C0102	-0.67	1.15	-0.67
C0121	0.00	0.00	0.00
C0122	0.00	0.00	0.00
C0131	0.00	0.00	0.00
C0141	-0.67	-1.15	2.00
C0142	-0.67	1.15	-0.67

Recebido em: 23/01/2017  
 Primeira decisão editorial: 04/07/2017  
 Versão Final: 13/07/2017  
 Aprovado em: 18/08/2017

