

Educational agents and sensitive and receptive interactions for learning in early childhood in vulnerable contexts

Agentes educativos e interacciones sensibles y receptivas para el aprendizaje en la primera infancia en contextos de vulnerabilidad

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Abstract

The objective of this research is to identify Sensitive and Receptive Interactions for Learning in Educational Agents serving Early Childhood children in educational instances in Vulnerable Contexts. It is a quantitative, descriptive and non-experimental cross-sectional study. The Participants were educational agents supporting children who attend a Play Center and a Shelter School. The Responsive Interactions For Learning: Educator Version (RIFL-E) Scale was used, which is used to identify how sensitive and receptive a caregiver is, which is done by observing them when they interact with a child (observational assessment) through a 5 minutes video of a cooperative game. Although there are natural differences between both scenarios due to their accentuation, the Shelter School is formal and at the primary level, while the Playground is non-formal and early education, this research allows us to emphasize the importance of the playful, the meaningful, attentive listening, flexibility, adaptation, inclusion, in the teaching-learning process.

Inclusion, Interactions, Responsive

Resumen

El objetivo de esta investigación es identificar las Interacciones Sensibles y Receptivas para el Aprendizaje en Agentes Educativos atendiendo niños de Primera Infancia en Instancias educativas en Contextos de Vulnerabilidad. Es un estudio de tipo cuantitativo, descriptivo y no experimental de corte transversal. Los Participantes fueron agentes educativos apoyando a niños que asisten a una Ludoteca y una Escuela Refugio. Se utilizó la Escala Responsive Interactions For Learning: Educator Version (RIFL-E) que se usa para identificar qué tan sensible y receptivo es un cuidador, lo cual se hace observándolo cuando interactúa con un niño (evaluación por observación) a través de un video de 5 minutos de un juego cooperativo. Aunque hay diferencias naturales entre ambos escenarios por su acentuación, la Escuela Refugio es de ámbito formal y de nivel primaria, mientras que la Ludoteca es de ámbito No Formal y de educación temprana, esta investigación nos permite enfatizar la importancia de lo lúdico, lo significativo, la escucha atenta, la flexibilidad, la adaptación, la inclusión, en el proceso de enseñanza aprendizaje.

Inclusión, Interacciones, Receptiva

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Introduction

According to a study by CONEVAL (2012), 54.6% of babies from 0 to 1 year old and 56.4% of boys and girls from 2 to 5 years old live in poverty. Of them, 12.5% and 13.4%, respectively, are in extreme poverty. It is observed that the percentages of poverty and extreme poverty are higher for early childhood than for the total population, and also for children in middle childhood or adolescence.

Maropa and Kaga (2015), citing some experts such as Sall, Lata, Legrand, *et al.*, show that inadequate child care, poor nutrition, health problems, and physical and emotional safety can affect the learning potential of children. children in different ways: intellectual delay, decreased cognitive and behavioral abilities, delay in motor development, depression and difficulties in attention and concentration.

Studies in neuroscience also show the importance of early childhood education and care in lifelong learning and well-being; Furthermore, the emotional care and timely stimulation of children's abilities in the development of the architecture of the brain, promotes the great difference between being an empathetic citizen to being responsive, from being a safe person to a violent person. It is at this age that interventions have a greater effect on reducing inequalities.

The results of the PISA 2015 assessment (OECD, 2016) reveal that, in practically all OECD countries, 15-year-old children who had access to Early Childhood Education and Care (ECEC) showed better performance than their peers without ECEC.

According to the report, children who live in disadvantaged contexts are the ones who benefit the most and focusing on them would provide the best results, as it offers them the basis for successful continuous training and promotes the development of socio-emotional skills, which, without it, would hardly be possible they could be guaranteed.

The Loving and Sensitive Care model, developed by the World Health Organization and the United Nations Children's Fund (Organización Panamericana de la Salud, 2021), is based on recent research from The Lancet series (2016) and others scientific publications.

Has recommended a change in child development care practices, considering the importance of bonding relationships, emotional support and the quality of interactions as decisive factors in the lives of young children.

Research shows that children's brains develop more rapidly in the first 2-3 years than at any other time in life. These early years are also a critical period of adaptability and responsiveness to interventions. Lack of adequate nutrition, stimulation and protection in early childhood has harmful effects that can have long-term impacts on families and communities.

Beyond the evidence that exists regarding the importance of initial education and its impact on people's lives, it is important not to lose sight of the fact that initial education is made and built in educational services and care modalities and that the main promoters of change are the members of the groups of educational agents, who face different challenges every day to deliver actions and interventions focused on sensitive and loving care. An Educational Agent exercises a substantive educational function "accompanying the development and learning of girls and boys from zero to three years of age, in the different services" (SEP, 2017, p.182).

Bowlby's (1989) studies on attachment affirm that girls and boys need to have the presence of their reference figures, they need family environments of care and the natural availability of caregivers and educators when due to needs they require that their daughters, sons or wards be cared for by others. To do this, we must encourage girls and boys to develop a secure attachment that allows them to feel safe and thus move towards autonomy.

Many experiences show that girls and boys who have attended children's centers or maternal institutions, and have enjoyed this type of environment; enriched with good books, a variety of music, unstructured toys, a large and clear space to develop movement practices spontaneously, and affectionate and attentive interventions from educational agents; They develop in them a great capacity to think, listen, live together, create and propose; the emergence of own ideas intensifying.

Educational agents play a fundamental role in the accompaniment and execution of quality education, since they have the obligation to make an intentional, organized and systematized contribution to the attention, care, development, education of children from birth, independently of the institution, modality or function inside and outside a school center. The participation of educational agents is decisive in building an environment that favors the development of intellectual, emotional, social, academic and physical capacities through a set of learning experiences in early childhood children, since they are the ones faces a process in which he has to face problems related to students with difficulties, for example, attention, concentration, behavior, learning, etc., and who in turn is pressured to complete study programs that are often far from of the real needs of the community it serves.

Promoting autonomy from an active position is the basis of educational support systems in early childhood from the perspective of boys and girls as subjects of law, which is why the following research question is posed: what are the sensitive and receptive characteristics that educational agents favor for learning when working with the boys and girls they support in educational instances in contexts of vulnerability?

The objective of this research is to identify Sensitive and Receptive Interactions for Learning in Educational Agents serving Early Childhood children in educational instances in Vulnerable Contexts.

Justification

Thanks to the Sustainable Development Goals (SDGs), which were adopted by the United Nations as a universal call to end poverty, protect the planet and ensure that by 2030 all people enjoy peace and prosperity, we can generate awareness and action on the importance of providing quality environments to provide sensitive and responsive interactions with early childhood children (UN, 2015). The fourth objective mentions seeking inclusive and quality education for all, based on the firm conviction that education is one of the most powerful and proven drivers to guarantee sustainable development. To this end, it seeks to ensure that all children complete their free primary and secondary education by 2030.

It also aims to provide equal access to affordable technical training and eliminate gender and income disparities, in addition to achieving universal access to higher education quality.

As a result of the legislation and policies that have emerged in the world on the issue of early childhood, since the international convention on the rights of the child (UN, 1989), the conception of the child has been transformed towards the right approach, where the recognition of children as people with dignity and with an active role in their own integral development process is presented.

Based on this interest, international studies have made contributions related to guaranteeing the development and comprehensive care of children, based on the legal approach, emphasizing the complex situation implied by the high degree of vulnerability of this population group which requires intervention and articulation between the State, initial education programs, the family and the community in general. In this process, the educational agent plays an active role in forming intersectoral work teams in favor of action planning joint ventures that benefit and meet their needs.

The benefits that this Project will bring to society are mainly the articulation of the University with educational and community entities to respond to the challenges represented by this change in the country's educational policy of caring for Early Childhood as subjects of law, in especially children with greater support needs.

As a scientific contribution, there is mainly the validation of the training work model that is done with the students of the Educational Programs of Associate Professional in Child Development and Graduate in Early Childhood Education in Professional Practice Scenarios based on a Model of Inclusion, Appropriate Practices for Development and Flexible Curriculum.

This validation will increase the quality of our training processes for future students of these Educational Programs and even more so with the Interinstitutional Bachelor's Degree in Initial Education and Institutional Management that recently began its activities at the Technological Institute of Sonora.

In addition, it will contribute to the state of knowledge of Early Childhood studies from the operationalization of an innovative concept such as Loving and Sensitive Care (OPS, 2021). The commitment of this Project to the challenges of Early Childhood care in terms of considering them subjects of law, leads it to articulate first-hand with educational and community entities with great support needs to be able to comply with these principles.

This project responds to what was proposed by ITSON in its Institutional Development Plan 2024 (ITSON, 2023) in its Governing Axis 2, which refers to Research and technological development understood as Science, technology and innovation that generates sustainable and sustainable solutions to social, economic and environmental problems in a global scope, specifically in its Strategic Objective 2.3, Develop research, innovation and knowledge dissemination capabilities.

Likewise, it responds to Governing Axis 3, referring to university Extension and social projection, meaning this to university Services that transfer the benefits of science, technology, culture, sports and life skills, for the well-being of the community, specifically in its Strategic Objective 3.2, Strengthen the link with the Institution's sectors and interest groups, and Strategic Objective 3.7, Strengthen the intervention model to improve the social fabric of the vulnerable population.

Finally, this project is part of the lines of research followed by the Academic Group of Educational Alternatives for Social Inclusion, specifically regarding early childhood care in contexts of vulnerability. It is also part of the creation of the Educational Program for a Bachelor's Degree in Initial Education and Management of Institutions, in which the Academic Group itself has had a fundamental participation in both its management, development and implementation. By being associated with said Educational Program, we are part of the efforts of various instances at the national level to be able to comply with the modifications in constitutional articles 3, 31 and 73, highlighting that initial education will be provided and guaranteed by the State, in its three levels of government: Federal, State, and Municipal, and what is a child's right (Diario Oficial de la Federación, 2019).

Methodology

This is a quantitative, descriptive and non-experimental cross-sectional study.

The Participants will be obtained through convenience sampling with children who attend a Play Center and a Shelter School, as well as the educational agents who support them in these institutions.

The Responsive Interactions For Learning Scale: Educator Version (RIFL-E) by Sokolovic, Brunsek, Rodrigues, Borairi, Jenkins, & Perlman (2021) will be used. RIFL-E is used to identify how sensitive and responsive a caregiver is, which is done by observing them interacting with a child (observational assessment), which is done in eight minutes so that it can be used effectively at the child level. the population.

The caregiver and child participate for five minutes in a challenging cooperative game. Play could include sorting shapes or building a Lego structure, depending on each child's developmental level. The trained rater watches the interaction video and rates the caregiver on fifteen items using a five-point Likert scale (scoring takes approximately three minutes per video). The fifteen items assess the extent to which the caregiver identifies and responds to the feelings and thoughts of the child with whom he or she is interacting, including providing the child with meaningful verbal and nonverbal directions, taking into account what the child knows and understands, and promote reciprocity.

The average of the fifteen items is calculated, producing a composite caregiver sensitivity level score that ranges from 1 to 5. RIFL-E has demonstrated good psychometric properties when used for mealtime observations and scores are associated with the domains of emotional and behavioral support ($b = 0.19$, $p = 0.02$) and, to some extent, with committed support for learning ($b = 0.15$, $p = 0.07$). Less than half of the variance in scores was shared among their educators.

A translation will be made by a professional translator to undergo a judging by early childhood experts, to achieve its own adaptation to the culture of the region of Mexico where it will be applied.

In the first instance, the study protocol will be submitted for approval by the Ethics Committee of ITSON. The phases to be developed will be the following:

- Phase 1. Identification of participants: The project will be developed with children who attend a Play Center and a Shelter School, and the educational agents who support them. Children whose legal guardians give their written authorization through a letter of informed consent will participate, which will guarantee the confidentiality of the information and video records.
- Phase 2. Field work: As part of the Community of Childhood Support (COMANI, for its acronym in Spanish) Professional Practice Circuit of the Educational Programs of PADI and LEI of ITSON, They assign teachers (educational agents) to different scenarios, two of which stand out for serving vulnerable children: COMANI Playground and the Corazón de María Shelter School. Video records will be made of interactions between educational agents and children in key activities of their daily routine throughout the period January-May 2023.
- Phase 3. Analysis of results: The data obtained will be analyzed using the Statistical Package for the Social Sciences 26 (IBM® SPSS Statistics), in which descriptive statistics will be obtained for each item as well as the Scale in total.

Results

6 daily activities were selected for each Scenario. For the Refuge School they were: School Entry, Training, Food, Color Play, Painting, and Teaching. While for the Playroom they were: Sensations, Colored Fabric in Movement, Bits, Rhythms, Movement, and Butterfly.

Each activity was coordinated by a Teacher Monitor assigned to each Scenario as part of the Professional Practice Course of the Third Semester of the Educational Programs of PADI and LEI of ITSON.

There were 6 Teachers for each of the aforementioned Scenarios, with an average age of 19 years.

The Refuge School provides Primary Level Education to children from 6 to 12 years old at risk of being homeless while the COMANI Playground does so with children from 1 to 8 years of age: from 1 to 3 years in Non-Formal Education, while from 3 to 8 years in Homework Club as a complement to Formal Preschool and Lower Primary Education.

Both Scenarios are located in urban neighborhoods with high rates of marginalization and crime.

RIFL-E divides its 15 items into 4 Categories: Clarity in Communication, Affective Interaction, Prediction, and Equity.

Clarity in Communication involves an educational agent communicating with a child using language that is understandable (i.e., use of clear, developmentally appropriate language) and that enhances the child's own vocabulary.

Affective Interaction refers to positive back-and-forth interactions (Aksan *et al.*, 2006) and is observed when an educational agent invites children to participate in an activity, promotes turn-taking, asks questions, and is friendly, warm, adaptable, responsive and flexible (Pauker *et al.*, 2018).

Prediction is defined as understanding children's thoughts, feelings and abilities. Which allows the educational agent to take perspective and, therefore, understand the emotional and cognitive states of the children.

Finally, Equity refers to the distribution of care and timely response to all children.

Table 1 shows the means for each of the Categories as well as the entire Scale.

Categories	Scenery	
	Shelter	Playroom
Clarity in Communication	7.00	15.00
Affective Interaction	9.67	20.00
Prediction	9.67	20.00
Equity	35.50	74.00
Responsive Interaction	35.50	74.00

Table 1 Category Means and Total

Conclusions

Statistically, it is not possible to establish significant differences between both scenarios given the difference in age range, as well as the educational focus (in one formal environment, the Shelter School, and in another non-formal environment, the Playground), but it is possible to deduce important lessons regarding the method of attention and teaching.

The Educational Agents, although they have the same curricular training and are similar in age, are determined in their actions by the situational context. At the Shelter School there is a hierarchical structure and rigid processes in which its function is more passive and reactive support to the regular teachers, which is why its averages are lower in all categories compared to those of the Play Center.

For its part, the Playground, although it has a Planning with clearly delimited stages, these are not so rigid that they do not allow innovation and initiative from the Educational Agents. Even though they have pre-established times, the dynamics that are followed, of patience, empathy and attentive listening, make the children enjoy the activities without frequently showing disruptive behaviors.

This type of disposition of the teachers makes it impossible to avoid considering them as dependent given their risk context and their initial reluctance as boys and girls to maintain receptive communication, as found by Schneider *et al.* (2023) in the preschool teachers they evaluated.

Playfulness predominates in the educational approach managed in the Playroom, as well as dynamics and the promotion of initiative on the part of boys and girls.

Significant experiences in early childhood are encouraged through adult figures who, in turn, can lead to support for the family support scheme. Similar to the mediation effect on the socioeconomic level of mothers of attending daycare at an early age found by Aranbarri *et al.* (2023).

For future research that resumes the experience gained in this project, it is advisable to increase the sample and establish comparisons in similar age ranges, as well as select an activity that is as common as possible that encourages greater exchanges of various types between educational agents and children.

Continuing in this line of research would contribute to what some authors (Pianta & Hofkens, 2023; Seo & Song, 2023) mention about the positive influence of interactions between teacher and students on the development and learning of the latter.

A final recommendation lies in monitoring the children with whom there are the most positive interactions to evaluate their evolution and the way in which it affects their development in all areas.

Gratitude

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