

Mathematical Concept Building by Intellectual Deficiency Children from “Pocket Ball Game”

Ana Paula Xavier, Flávia Cristina dos Reis Abud Fonseca¹
(Specialized Educational Service Center – PJF, Brazil)

Abstract: The work done at Specialized Educational Attendance (AEE) is featured as legal contribute guaranteed to the deficiency children, target of the special education. The assumption of AEE is foment as work to minimize or eliminate learning hurdle using strategy and several resources. Discuss and think about the way each one learns and propose strategies contenting individualities compound by the school and AEE are imperiously on promoting significant learning. Intellectual deficiency children (DI) may have in their learning process, difficulty working with abstract mathematical concepts or to work in the symbolic field. Searching to minimize those difficulties, the current article’s goal is to present a work done with ID children, made by playful material to promote real and concrete learning of basics mathematical concepts. Our search is for enlarging the way to look at those students, furthering integration between knowledge and the ID child, besides understand this practical teaching may and must be replied in regular classes as other resources classes.

Key words: mathematics, game, intellectual deficiency and specialized, educational attendance

1. Introduction

National Special Education Policy at Inclusive Educational Perspective (BRASIL, 2008), defines as target for Special Education (intellectual, physical, hearing, visual and multiple) deficiency students, global development disorder (TGD) and high abilities or giftedness (AH/SD). For this policy must be guaranteed the access, participation and learning to those students in regular schools, guiding education system to further answers to special educational needs.

ONU defines deficiency those “[...] who have long term physical, intellectual or sensory impediments, which acting with several hurdling may block full participation and effective in society as equal conditions to everyone else” (ONU, 2006).

Regarding people who’s got TGD and AH/SD we understand that TGD are the ones who feature considerable reciprocal social interactions qualitative changes and communication, a restricted repertoire of interests and activities, stereotyped and repetitive. Included to this group child psychosis (MEC/SEESP, 2008). The ones characterized as AH/SD demonstrate high potential in the following isolated or combined areas: intellectual, academics, leadership, psychomotor and arts, besides great creativity, learning involvement and assignment

Ana Paula Xavier, Doctoral Student in Education, Master in Diversity and Inclusion, Psych pedagogue.

Flávia Cristina dos Reis Abud Fonseca, Master Student in Higher Education, Specialized Educational Service Center – PJF; research areas: teacher education, inclusive education and literacy. E-mail: flaviafonseca.psicopedagoga@gmail.com.

achievements of interest (MEC/SEESP, 2008).

For this general public there is a Specialized Educational Attendance (AEE) offer that must happen at against school shift in Multifunctional Resource Classes (SRM) or a Specialized Educational Attendance Center (CAEE) and provide as an objective a specific complementary or supplementary work to decrease difficulties caused by sensory, physical, intellectual or behavior, developing and exploring at the most their competency an abilities. According to Educational Ministry (MEC) AEE “is a special education service that [...] identifies, develops, and organizes educational and accessibilities resources, with eliminate hurdles for fulfill participation of the students, considering their special needs” (SEESP/MEC, 2008).

Still according to MEC to act on SEM or CAEE, the teacher needs as specific graduation. As the CNE/CEB #4/2009, article 12 resolution to act on specialized educational attendance, the teacher must have an initial graduation that enables teaching and specific graduation at special education. AEE teacher as function performs this attendance as school complementary or supplementary activities, considering abilities and particular needs of those special education target students. The AEE teacher follows the students’ school path to work autonomy at the school or somewhere else. That’s why it’s great importance joint between AAE teacher and the school establishment regular teaching which will be guided by strategy and/or differentiated resources, furthering, therefor a better process of learning, autonomy and self-esteem of the students.

The professional’s attributions who work on SEM or CAEE “are to identify, develop, product and organize services, educational accessibility and strategy resources, considering the students’ special needs as building an action plan to eliminate them.” (MEC/SEESP, 2009). In side that perspective to think about a work with games and ludic is essential, once, as Antunes says (2014), “most philosophers, sociologists, ethologists and anthropologists agree on understanding a game as an activity on itself that has as a goal to decode enigmas of life and build a moment of enthusiasm a joy in the harshness walk of humanity. Therefor, playing means to take from life no other reason but itself. Summary, the game is the best way to start aesthetic pleasure, to the discover of individuality and individual mediation” (Antunes, 2014, article 36–37).

Develop “individuality discover” and a way to an individual mediation seems us fundamental to an Intellectual Deficiency child (DI), once she or he needs activities to develop autonomy and independency in matters of regarding day by day actions. For that, the game shows effective, once it enables the child to establish strategies on your own and think about the learning process, besides providing allowances that potentiate abilities and promote the building of attitude and values. As assumption, we found in Xavier and Martins (2017) that, “finding strategies and foment a real and meaning learning in a way to increase competences and capacity of those students must be beyond difficulties that are many and contextualized, but if we guide on them we’re enhancing exclusion. Such exclusion shouldn’t permeate educational spots, because it matters at the understanding of the deficiency as something static, definitive, installed and no possibility of development” (Xavier & Martins, 2017, p. 77)

When treat abstract concept teaching for DI students, many are the challenges. Some ID children show significant commitment on mathematics abilities acquisitions, because they show, in their files, difficulties to work in symbolic field and hypothetical-deductive field.

Intellectual deficiency, according to American Association Intellectual Deficiency Development (AAIDD) characterizes as an inferior intellectual functioning compared to average, associated to adaptative limitations at least in two abilities areas (communication, selfcare, homelife, social adaptation, health and security, use of communities resources, determination, academic functions, recreation and work), that occurs before 18 years old.

The deficiency provokes the need to create alternative ways to be and live in our world and then AEE work is fundamental 'cause the child don't get to feel the deficiency, but indeed the difficulties of it, that is, the deficiency is no longer a hurdle and gets to be a booster force capable to create redress that leads to overcoming.

The interest in producing structured educational materials adapted to a DI student wich goes to an AAE, is featured by presenting as major goal the elimination of hurdles that stop them, or difficult, their formal process of learning.

Given the above, we search on Specialized Educational Attendance (AEE) to foment the acquisition of the ability and for that, we valued of the use of many strategies. One of the strategy that we relied is the confection of materials to use AEE. Trying to help a DI child on construction of reference number/quantity, we build the pocket ball game.

2. Methodology

This case presents a work done at Specialized Educational Attendance Center (CAEE/downtown) with a child cared on AEE at the center above. The child we brought to this case is nine years old, registered on 4th grade middle school and has as DI report. As goal purpose we've done six attendance of 60 minutes each, due March of current year.

We know playing games propitiate ludic moments that help on the process of learning and the child, at the moment, needs to solve problems, create strategy and follow rule, besides encourage creativity and integration once “the game on its full sense, is the most efficient way to encourage intelligence. The game's room space allows the child (and even adults) to accomplish all as wish” (ANTUNES, 2014).

During the game, the student appears in a autonomous way providing opportunities of skills developments, such as individual thoughts on the search of resolutions for the problem proposed. Games using make the learning one to think about the results, your own attitudes and choices. Thus, it allows us to act on their try outs, mistakes and hits, providing an important moment of application evaluation for the chosen game's applicability and its contribution for the student's development. The game, worked properly, beyond the concepts allows the student to develop organization capability, analyze, reflection and argumentation. (...) (MEC, 2014).

Like thinking functions for each game's making, the rules established are also important, cause the child needs to understand them and gets done what is asked to do according to proposed. At this moment, it is important that the rules are clear and the AEE teacher needs to be sure the student has understood them. Otherwise, the game looses part of its purpose.

3. The Attendances

At the firsts attendances the student has shown some kind of resistance, highlighting difficulty for the proposed matter. With propriate mediation and encouragements to propose the child confidence to do the tasks, the student started to gather the game, getting interested and participative.

3.1 First Attendance

During the first attendance, we introduced the game, explained the rules and asked him, at any moment, to questions us, in case of doubts.

At this first moment, we asked the student to fit the little ball in a number that he “recognizes”. Right away,

he fitted at number 1 (one). When we asked if he could recognize another number, he answered yes, zero and 2 (two), highlighting, therefor, his difficulty, also, at recognizing numbers.

3.2 Second Attendance

For this second moment, we draw a number and asked him to fit the ball at the drawn number. After fitting the ball the student should name the number separate the quantity of popsicle sticks. The first number to be drawn was 5 (five). The student didn't recognized the number, but, could count to five on the sticks, showing some knowledge at quantity. At this meeting, we worked the numbers from 0 (zero) to 5 (five), naming and counting them.

3.3 Third Attendance

At this attendance, we opted to strengthen the work started on the numbers to 5 (five). Our intention was to further self confidence for the student to feel stimulated and could realize his learning.

3.4 Fourth Attendance

On our 4th meeting, we had as a goal to introduce the numbers 6 (six) and (seven). The student shown a bit resistance and insecure. So we worked again at numbers from 0 (zero) to 5 (five) and introduced only 6 (six). At this moment, the student shown difficulty at counting. We opted to work with counting material (popsicle sticks) and finger counting as well. At the end of attendance, we asked the student to show us the numbers from 0 (zero) to 6 (six) at the game. The student recognized the numbers and got the quantifications right.

3.5 Fifth and Sixth Attendance

The following attendances, we used the same work strategy, at first, with the number he already could recognize and count, and then introduce a new number: 7 (seven), 8 (eight) and 9 (nine). At this moment, the student shown more confident and counting stability. At some moments shown some doubt between the numbers 6 (six) and 9 (nine), but on counting concern shown more consistent, with questions like: “nine is bigger than six. Isn't it?”

During those final attendances, we introduced others counting materials (pompons, styrofoam balls, caps) so the student could realize the quantity maintenance, which was a difficulty appeared during the attendances.

At the end of attendances, we could conclude that the child could already gather the amount until 7 (seven) in a autonomous way, recognizing the number and counting it. It was possible to evaluate that the learning one was confident, creating strategies, interested and participative. The proposed mathematical concept achieved its goals showing some significant learning that will help its school context process.

4. Conclusion

The constant searching for new knowledge, using strategies and adapted materials for the individualities, at searching for minimize hurdles towards ID children real learning conditions, is the first step to embodiment the right of having a significant learning.

Through the ludic, playing around and games children develop important factors such as cognitive development, motor, social and affective, besides stimulate imagination, creativity, autonomous, attention, concentration, language development and thoughts organization. AEE is premised to eliminate hurdles that stop or difficult leaning of the special education target children and, therefore, it is part of the role to easy learning processes, tanking games and plays as supportive and making them important constituent elements of learning and

student’s developments.

References

- Antunes C. (2014). *Jogos Para a Estimulação das Múltiplas Inteligências* (20th ed.), Petrópolis: Editora Vozes.
- BRASIL (2008). *Política Nacional de Educação Especial na Perspectiva da Educação Inclusiva*, Brasília: MEC; SEEP.
- BRASIL (2009). Ministério da Educação. Secretaria de Educação Especial, Resolução 4/2009, Diário Oficial da União, Brasília, 5 de outubro de 2009, Seção 1, p. 17.
- BRASIL (2010). Ministério da Educação. Secretaria de Educação Especial, Marcos Político Legais da Educação Especial na Perspectiva da Educação Inclusiva, Secretaria de Educação Especial, Brasília: Secretaria de Educação Especial.
- BRASIL (21 Mar. 2013). Ministério da Educação. Secretaria da Educação Especial, Nota Técnica nº24/2013/MEC/SECADI/DPEE, Brasília, DF.
- BRASIL (2014). SECRETARIA DE EDUCAÇÃO BÁSICA. Pacto Nacional pela Alfabetização na Idade Certa: Jogos na Alfabetização Matemática. Brasília: MEC, SEB.
- Organização Das Nações Unidas (ONU). “Declaração dos direitos das pessoas deficientes”, accessed on 15 Sept. 2109, available online at: http://portal.mec.gov.br/seesp/arquivos/pdf/dec_def.pdf.
- Xavier A. P. and Martins G. P. T. C. (2017). “A construção de conceitos matemáticos com um aluno autista”, in: Xavier A. P., Martins G. P. T. C., *Imersões Cotidianas na Educação Inclusiva: Múltiplos Olhares, Múltiplos Saberes*, Curitiba: Editora Appris.

