THE ASSESSMENT OF CHANGE IN SOCIAL INTERACTION THROUGH OBSERVATION

LA EVALUACIÓN DEL CAMBIO EN LA INTERACCIÓN SOCIAL A TRAVÉS DE LA OBSERVACIÓN

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Abstract

The study of social interaction within the classroom is an important task because of the the influence that early social relationships have in the social and personal development of a person. In this paper we present a study where a specific intervention is implemented to improve the social interaction of one participant in an outside school enrichment program. A single-case design AB is used with this propose. The measurement of the changes is done through observation, using the Observational Protocol for Social Interaction within the Classroom (OPINTEC, v. 4). Three sessions are observed during the program in order to analyze the individual progress of the participant during the intervention. Lag Sequential Analysis with the program SDIS-GSEQ (Bakeman & Quera, 1996) is used for the assessment of the behavioral patterns. Results indicate an improvement in the relations between the participant and his peers in those interactions related with academic topics.

Keywords: high abilities; social interaction; observational methodology; lag sequential analysis; behavioral pattern.

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Resumen

El estudio de la interacción social dentro del aula es una tarea importante que viene justificada por la influencia que las relaciones sociales tempranas tienen en el desarrollo social y personal de una persona. En este trabajo se presenta un estudio que versa sobre la implementación de una intervención específica para la mejora de la interacción social en un alumno perteneciente a un programa de enriquecimiento extraescolar. Con este objetivo se emplea un diseño de caso único AB. La medida del cambio se realiza a través de la observación, utilizando para ello el Protocolo de Observación de la Interacción Social en el Aula (OPINTEC, v. 4). Se observaron tres sesiones a lo largo de la implementación del programa para evaluar el progreso individual del participante durante la intervención. Para el análisis de los patrones comportamentales se utiliza el análisis secuencial de retardo mediante el programa SDIS-GSEQ (Bakeman y Quera, 1996). Los resultados indican una mejora del estudiante en la relación con sus iguales en aquellas interacciones cuya temática está centrada en el contenido académico.

Palabras clave: altas capacidades; metodología observacional; análisis secuencial de retardo; patrón comportamental.

Introducción

People with high intellectual abilities have special educational needs that require a different educational support (Pomar, Díaz, & Fernández, 2006). One of the most important concerns on this field has been the lack of challenge in regular classrooms where there is not a specific intervention for the most advanced students (Plucker & Callahan, 2014). Students with high abilities face, mostly, two different types of problems: at school and socioaffectives. In the educational context, the main problem is underachievement (Peters, Grager-Loidl, & Supplee, 2000). In reference to the socio-emotional dimension, we can find recent studies which focus on this topic in the field of gifted education (Díaz & Cadenas,

2016; Francis, Hawes, & Abbott, 2016; Freeman, 2014; Jen, Wu, & Marcia, 2016; Jenaabadi, Marziyeh, & Dadkan, 2015; Navarro, Rodríguez-Naverias, López-Aymes, & Cadenas, 2015). Although in general there are recent studies that prove the appropriate emotional and social adjustment in gifted students (Borges, Hernández-Jorge, & Rodríguez-Naveiras, 2011; Cadenas, 2015; Lee, Olszewski-Kubilius, & Thomson, 2012; Francis, Hawes, & Abbott, 2016), in a specific level, it is possible to find children with difficulties in their social relations for diverse reasons like dyssynchrony (Guenolé, Speranza, Louis, Fourneret, Revole, & Baleyte; 2015; Terrassier, 2000), problems accepting their giftedness (Gross, 1989), as a consequence of been labeled as gifted (Freeman, 2014) or because they feel different (López, Bralic, & Arancibia, 2002).

To confront those problems different programs has been developed. Enrichement programs represent an option for the development of gifted children's abilities and creativity (Renzulli, 2014) with positive effects on their social self-concept (Vogl & Preckel, 2014) and on their achievement and social development (Kim, 2016). The objectives of these programs are focused in providing knowledge according to their needs, helping to improve their talents or working in scholar task that represent a challenge (Borges & Hernández-Jorge 2006). The intervention on this type of programs is aimed toward the intelectual enrichment but also the socio-emotional one.

One approach to the analysis of social skills is the study of social interaction between peers. The study of social interaction during childhood has been widely studied (Del Caño, 1989; Flores & Santoyo, 2009; Gifford-Smith & Brownell, 2003; Guijó, 2002; Rubin, Bukowski, & Parker, 1998; Santoyo, 1996; Webb, 1983) because of the important influence that peers have on children's behavior and development (Hoogeveen, van Hell, & Verhoeven, 2009). Interaction with peers is beneficial for the intelectual development and the social growth of a child (Díaz-Aguado, 1986; Harrist, Pettit, Dodge, Bates, & Bates, 2013; Kutnick & Kington, 2005; Pachucki, Ozer, Barrat, & Cattuto, 2015).

Some approaches suggest that the social adaptation in primary school of a child is a predictor of his or her ad-

justment and academic performance (McKinney, Mason, Perkerson, & Clifford, 1975) and also warns about the negative consequences that an inappropriate social development in the childhood and adolescence can bring to the adult stage (Hartup, 1992).

In the field of study of social interaction, it is important to evaluate the functional mechanisms which regulate social interactions: effectiveness, correspondence and social reciprocity (Santoyo, 1996; 2006). Social effectiveness is defined as the ability to produce a reaction in the social environment, that is, when child A starts an interaction and it is answered by child B, means A shows social effectiveness. Social correspondence is the skill to react to the stimulus from the environment. Following the previous example, child A has this ability when he/she replies to the interactions of child B. Finally, social reciprocity implies bidirectional interactions in equal proportion between child A and B.

To evaluate social interaction, it is possible to use several procedures and instruments (questionnaires, sociograms, interviews, etc.). Sistematic observation allows studying interactive behaviors in an objective way and in its natural context (Anguera, 1990; Sánchez-Algarra & Anguera, 2013) and it has been widely used in the educational context (Borges & Rodríguez-Dorta, 2015; Díaz, Borges, Valadez, & Zambrano, 2015; Rodríguez-Naverías & Borges, 2015). Therefore, it represents the perfect procedure to analyze the social relations within a group given that the conduct is close connected and influenced by its context (Lungu & Debas, 2013; Wu, Hursh, Walls, Stack, & Lin, 2012) and also for program's evaluation (Portell, Anguera, Chacón-Moscoso, & Sanduvete-Chaves, 2015; Rodríguez-Naveiras & Borges, 2016).

The aim of this study is to analyze the social interaction with the group of one participant of an out of school program, design an intervention to improve his social relations with his peers and measure the effects of it through observation.

Method

Design

For the study and evaluation of the social behaviors of the participant we used a single-case design, AB.

Participants

The sample of the study is composed by three agents: the focal student, a six years old boy; the two instructors of the group of the focal student, a psychologist who is 25 years old with four years of experience in the program and a student of Psychology who is 20 years old; and, finally, the classmates of the focal student, four children between six and eight years old.

Materials

The instrument used in this study is the Observation Protocol for Interactions within the Classroom (OPINTEC-v.4; Cadenas & Borges, 2016) designed to assess the social interaction within the educational context between the three agents involved in the classroom: teacher, classmates and the focal student. The focal student is the participant that is going to be observed in order to analyze his/her social behavior within the classroom. The other two agents, classmates and teacher, are observed and coded only when they interact with the focal student. All those interactions which involve the focal student will be coded. The instrument evaluates three types of interactions: positive, negative and absence of interactions, and it is based in the evaluation of the mechanisms which regulate social interactions: effectiveness, correspondence and social reciprocity, described by Santoyo (1996, 2006). Those mechanisms can be measured by systematic observation. Based on the theoretical definition of each mechanism, different behavioural patterns were studied. Only those which described the aim of each mechanism were selected for the analysis. For example, in the case of social effectiveness, a child A would show social effectiveness when he starts an interaction with a child B and he/she answers back (Santoyo, 1996). Based on this, indicators of appropriate

social effectiveness could be operacionalizarse on a behavioural pattern where a focal student starts an interaction with a classmate and immediately, in the first lag, the focal student obtains an answer from the person with whom he/she initiates the interaction (Cadenas & Borges, 2016). This instrument was used for a cross validity study carried out in The Netherlands. The objective of this research was to study the social interactions within a different cultural and educational context from the one where the instrument had been used before. The results obtained in terms of reliability and the homogeneity of the categories reached the standards required in literature (Cadenas & Borges, 2016).

This instrument has a hierarchical structure with five macrocategories, divided in six criteria and with 14 codes, which represents the behaviors directly observed. Annex 1 attached to this document, provides a brief description of the behaviors that can be analyzed.

The structure of the instrument is presented in Table 1.

Procedure

This study was conducted in an out of school program for gifted children between 4 and 12 years old and their families, the Comprehensive Program for High Abilities (Programa Integral para Altas Capacidades, PIPAC). The main aim of this Program is to contribute to the complete development of children with high abilities and it is focused in working socio-emotional aspects (Borges & Rodríguez-Naveiras, 2011; Montero, Hernández-Jorge, & Borges, 2010; Rodríguez-Naveiras, 2011). The Program takes place from October until June in biweekly sessions. The contents of the program are divided in periods of three months. In the first one the sessions are focussed in intrapersonal aspects; in the second one, in interpersonal work and, in the last one, in cooperative work. All parents gave their authorization to record all the sessions.

The first session which has been analysed is the fourth one of the focal student in the program since the first three were rejected in order to avoid the reactivity bias. This session corresponds to the regular planning in the sessions, withouth making any special emphasis in the interaction between the participants. The information from this session was used as a base line. The social behavior of the focal student in the Program was analyzed to design an intervention with the aim of improving his interactions with the group and the instructors.

Table 1.

Observational Protocol for Interactions within the Classroom (OPINTEC-v.4).

Macrocategories	Criteria	Codes	Agents
Positive social interaction	Activity-relatedinteractions	**SI:** Starts the interaction **A:** Answers	**T:** Teacher **F:** Focal Student **C:** Classmate
	Non-related with the activity interactions	**SGI:** Starts general interaction **AGI:** Answers general interaction	**T:** Teacher **F:** Focal Student **C:** Classmate
		FD: Fondness	**F:** Focal Student **C:** Classmate
Negative social interaction	Negative interaction	**AP:** Assaults phisicaly **AV:** Assaults verbally **DA:** Disruption	**F:** Focal Student **C:** Classmate **F:** Focal Student
Absence of interaction	Absence of interaction	**NI:** No interaction	**F:** Focal Student
Conducts of the educational agent (teacher)	Exposition in groups Contingency	**EG:** Exposition in groups **CL:** Control **RF:** Reinforcement	**T:** Teacher
Instrumental categories		**Y:** Unobservable	**F:** Focal Student

At the end of the first term we design a specific intervention to improve the interaction between the participants. The intervention was implemented at the start of the second term until the end of the course. Two sessions were analyzed after starting with the intervention, one during the second term of the program and the other one in the third trimester.

The design of the intervention is adapted from the activities from the Teaching Program for Social Interaction Abilities (Programa de Enseñanza de Habilidades de Interacción Social (PEHIS) (Monjas, 1997). These activities were designed to work different aspects: how to start and maintain a conversation, listen to others, how to conduct an interview (to practice how to address and listen to the others) and negotiation and collaboration skills. The activities had a recreational character and relied on the continued practice of skills through role-playing and working in pairs. In addition, a novelty was introduced, "the Corner of the classmate", a space where each student could tell something personal or explain a topic of interest to the entire group. This element was introduced in order to give to the children the chance to improve their knowledge of their peers.

The structure of the intervention was divided in two areas: cognitive and social. The main goals of the cognitive area were to train the attention and listening skills of the participants in order to make them more receptive to the demands of the environment and to foster their curi-

osity and intellectual concerns. Given the age of the participants, the activities and exercises used were ludic and attractive for them, like scientific experiments, logical games, etc.

The main objective for the social dimension was to increase the social interactions between the participants, improving their skills to address and listen to the others. These goals were reached through three different procedures: ludic activities which focus in socioemotional aspects like frustration tolerance, self steem, etc; The corner of my mate: a space in which each student could share, exhibit or present some work or experience with the group during approximately 10 minutes, and the previous organization of the work groups for each activity. As it was explained previously, during the first observations it was verified there were participants who did not interact with each other spontaneously. Therefore, we decided to establish the work groups in advance. This was intended to provide opportunities for interaction in a safe environment to those children who interacted less frequently, while combining different profiles of interaction in order to exchange their roles and learn from their peers.

For further practice of cooperation and negotiation skills, students worked in a common project which they need to present at the end of each term. A summary of the final project carried out is presented in Table 2.

Table 2.

Phases of the final project.

Phase	Task
Phase A: Plan and development of the project	Explanation of the rules to carry out the project. Explanation of the objectives. Explanation of the structure of an interview: type of questions, etc. Election of the topic and assignment of the interviews.
Phase B: Preparation of the questions	Preparation of the interviews and gather information. Clasification of the information into different categories. Selection of questions and their answers base on the infomation gathered.
Phase C: Representation of our project	The rules, the board, etc. Selection of the materials needed to create the trivial. To write the rules of the game. Distribution of the tasks and responsabilities of each participant.
Phase D: How much do I know about my classmates?	The children will play one round and they will discover how mucho do they know about their peers after have done the interviews and organized the information.
Phase E: Explanation of our game	Grupal exposition of the project and a summary of the each participant.

Data Analysis

To determine the agreement between observers two procedures were used: Cohen's Kappa (Cohen, 1960) and Generalizability Theory (GT; Cronbach, Gleser, Nanda, & Rajaratnam, 1972). SPSS software in it's 19 version its used for the first index and EduG 6.0 to calculate the generalizability coefficient.

Global and relative frequencies of detection of the codes were calculated through the program SDIS-GSEQ v.5.1. (Bakeman & Quera, 1996).

Lag sequential analysis (Bakeman & Quera, 1996) was used to assess indicators of presence or absence of the functional mechanisms studied in the participant. This type of analysis is based on associations between two events codified, specifically, between a behavior called antecedent or criterion and a consistent behavior. The strength of this association is determined by the adjusted residuals, which inform if a consistent behavior occurs with a greater (in the case of excitatory behavioral patterns) or a lower frequency (in the case of inhibitory ones) than would be expected by chance. A residual adjusted above 1.96 is considered significant with a 95% confidence interval (Bakeman & Quera, 1996). Given the characteristics of this research, where the interest is focused on the determination and search for indicators that represent relational patterns, only the excitatory patterns have been collected.

In order to complement the information obtained through lag sequential analysis, the Yule's Q (Yule and Kendall, as cited in Lloyd, Kennedy, & Yoder, 2013) was also calculated. This statistic is used to determine the strength of the association between two behaviors similar to the correlation coefficient (Bakeman, 2000). The Yule Q values range from 1 for a perfect positive ratio to -1 for a negative ratio.
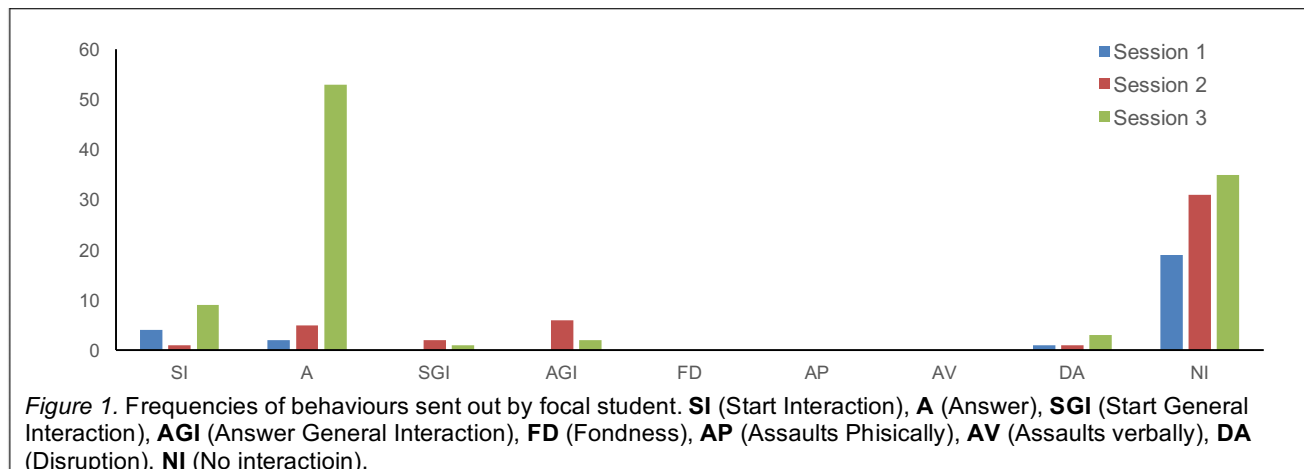
Results

The observational instrument presented achieves the standards required to guarantee the quality of data (Cadenas & Borges, 2016). The levels of reliability achieved during the creation of the instrument reached the 0.75 for Kappa's index (Fleiss, as cited in Bakeman & Gottman, 1989) and 0.90 for Generalizability Theory (GT) (Salvia, Ysselydke, & Bolt, as cited in Briesch, Swaminathan, Welsh, & Chafouleas, 2014). In terms of homogeneity, that indicates the degree in which the categories differentiate between the conducts object of study, also achieved the values indicate by literature 0.0 (Castellano, Hernández Mendo, Gómez, Fontetxa, & Bueno, 2000).

For the present study, five observers were trained according to the procedure standardized by the research group (Cadenas, Rodríguez, & Díaz, 2012; Rodríguez-Naveiras, 2011). The results obtained in the agreement between observers (Kappa's index) at the end of the training oscilated between 0.80 and 1 and for the reliability, measured by GT, between 0.90 and 0.94 (Cadenas, 2015).

The reliability was checked also during the coding period. The results obtained were satisfactory achieving the appropriate standards in both procedures, between 0.75 and 0.81 for Kappa's index and 0.90-0.95 for GT (Cadenas, 2015).

The analysis of observational data, which aim is the description of behaviors in its natural context and search for associations between the observed behaviors, allows two types of analysis: microanalysis and macroanalysis. Following, both approaches are described.

Figure 1. Frequencies of behaviours sent out by focal student. **SI** (Start Interaction), **A** (Answer), **SGI** (Start General Interaction), **AGI** (Answer General Interaction), **FD** (Fondness), **AP** (Assaults Phisically), **AV** (Assaults verbally), **DA** (Disruption), **NI** (No interactioin).

a)   Macro analysis

In the present study, we have measured the absolute frequencies of occurrence of each conduct in focal student. This first analysis is important because of the previous information it provides about the social conducts and the frequency with which they appear. In this first stage, it is possible to verify if there are behaviors related with positive interaction.
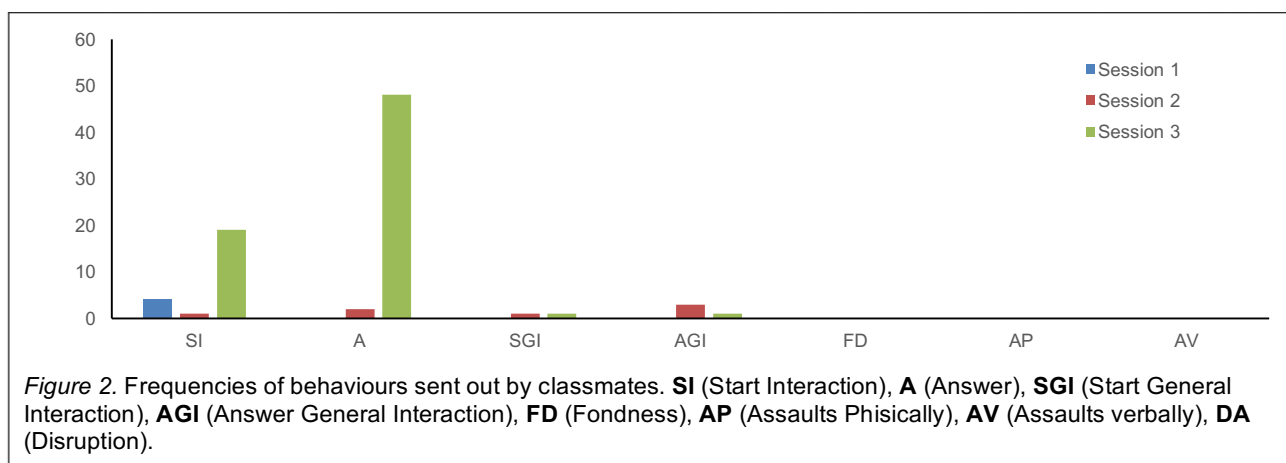
The results of the detected frequencies in the observed student categories appear in the illustration number 1. These results correspond to the global analysis of the student on the three analysed sessions.

The frequence of *Starting Interactions* (SI) related with the activity, for example making questions about some exercise, is not high in both first and second session but increases in the third one. However, the frequence of those interactions not related with the program

(speaking about the weekend, their hobbies, etc) is very low. The evolution in the *Answers* (A) related with the task from the focal student to his peers is relevant, since shows the child has a receptive attitude to the group, replying to the interactions of the others and continuing with the conversations. When the conversation is not related with the activity proposed in the session, in session 1 the rate of *Starts of general interactions* (SGI) is zero while the behavior appears during the intervention sessions, although with a low frequence.

It is important to highlight the absence of negative interactions in the analyzed sessions, even though the code *Disruption* (DA) is detected. This code refers to verbal and non-verbal inappropiate behaviors of the focal student that interrupt the dynamics of the sessions (to speak while the instructor is explaining, to interrupt the instructor, make noise, etc).

In the illustration number 2 the behaviors from the classmates in relation to the focal student are presented.

Figure 2. Frequencies of behaviours sent out by classmates. **SI** (Start Interaction), **A** (Answer), **SGI** (Start General Interaction), **AGI** (Answer General Interaction), **FD** (Fondness), **AP** (Assaults Phisically), **AV** (Assaults verbally), **DA** (Disruption).

There are changes between the analyzed sessions in the behaviors of the classmates regarding the focal student. The results confirm that the acceptance level in the group changes throughout the program since the interactions and the replies of the classmates to the focal student increase in the third session. In the beginning, there are just a few moments in which the classmates addressed the focal student, neither replies are associated to the approaches of the child in session 1, appearing for the first time in the second session. This situation improves during the second semester since the *Start of interaction* (SI) and the *Answers* (A) increase in the third session and even exceed the rate of the code SI in the focal student. The group not only begins to answer him more often but also addresses him on their own initiative, which shows a better level of integration of the participant in the group.

It is noted that no negative social interactions are detected by the classmates, which is a sign of good relations between the participant and the rest of the group.

b)   *Micro analysis*

Through observational methodology it is also possible to get other kind of absolutely relevant information, the study of behavioral patterns. To determine the association between categories, one conduct is selected, named antecedent or given behavior, and test which conducts, called target or consequents, appears after.

In this study, all the categories with a relative frequence equal or higher than 0.2 can be considered as antecedent. This criterion was established in order to guarantee that the conducts which were selected as given behaviors appeared with a relevant frequency.

The table is divided by those conducts initiated by the focal student and those started by the classmates. The column dedicated for the behavioural patterns it is shown the starting conduct of the pattern and, in the second column, the one that takes place immediately after (consequent conducts). In order to facilitate comprehension and clarity, the agent has been identified as follows: FC

when the focal student addresses the classmates and CF when it is the other way around, the classmate addresses the focal student. Finally, the initial F followed by the code, means the conduct is not aimed at any specific agent. The order of the information presented in the table is the following: first, the results of the chi square analysis for each behavioural pattern; second, the d Cohen's result for the effect size; third, the result of the adjusted residual and fourth, the result of Q Yule's index. Only those patterns which have been significant at least once during the evaluation are shown on the table and will be explained. The results of the sequential analysis are presented in the table number 3.

Next, we analyse the results obtained from the focal student interaction with his classmates.

The antecedent of the first behavioral pattern is a start of interaction of the focal student with a classmate (FC-SI). As we can see in Table 3, there are not signifficant patterns in the sessions 1 and 2 while in the third one the appropriate conduct is obtained, which is an answer from his classmate (CF-A). This indicates social effectiveness, since it is the student who obtains feedback from the addressed person.

Similar result is obtained with the second antecedent, an answer related with the activity (FC-A). No behavioral patterns are found in the first session which means there are not conducts that follows the antecedent with a probability higher than chance. A significant pattern is obtained in session two although the strength of the association could not be estimated given the low frequency of the pattern. In session 3 the behavior which follows it is a new answer from the classmates (CF-A). This implies that both of them are still talking, which indicates social reciprocity in their interaction. The interactions are not restricted to a start and answer, they carry on interacting and speaking about the activities they are doing in the program.

Regarding those interactions not related with the activity that is being carried out, when the antecedent is an answer of general interaction to the classmate (FC-AGI) there are changes in reference to the two aforementioned antecedent conducts. Only one behavioral pattern is obtained, in session 2, where the consequent

found is a new reply from the classmate (CF-AGI). This pattern is an indication of social reciprocity and shows there are continuous conversations in relation to personal or recreational topics (hobbies, holidays, about their friends from the school, etc) although in the third session this behavioral pattern dissapears.

Finally, in reference to the conduct No interaction (F-NI), this code represents the moment when the focal student is working alone or he does not show any intention of interacting with his peers. Several patterns are found. In sessions 1 and 2 the focal student interrupts what he is doing and decides to start an interaction with his classmates about the activity (FC-SI) in session 1, or about some topic unrelated with the program (FC-SGI) in session 2. In session 3 there are two behavioral patterns. The first one is the same one found in session 1, the start of interaction of the focal student related with the activity (FC-SI). The second behavioral pattern obtained is new: a classmate addresses the observed child to speak about the activity (CF-SI). This result indicates the observed child has an interesting enviorment and resort to his peers to comment some issue from the task and, equally, that his classmates also address him for example to ask his opinion about the activity, to speak about some doubt about the task, to ask for help, etc. This represents an improvement in comparison to sessions 1 and 2, where the focal student is the one who addresses the group and not the other way around.

Now, the behavioral patterns which are detected in the conducts started by the classmates are presented.

The first antecedent conduct is a start of interaction from a classmate toward the focal student (CF-SI). In the first session, a significant behavioural pattern is found, the focal student provides an answer to the other child (FC-A). Although the strength of the association could not be calculated, possibily because this pattern ocurrs with a very low frequence in the first session. This pattern is not significant in session two and this situation changes in the last session where Yule's coefficient is close to 1. In the last analyzed session the observed participant pays more attention to what happens around him and replies to the needs of his peers, acting properly when his classmates address him. This third pattern is an indicator of social correspondance.

The second and last antecedent is a reply from a classmate to the focal student (CF-A). There are no results in the first two sessions but there are in the third one. Before an answer from the classmate (CF-A) the result is another reply from the focal student toward his classmate (FC-A) with the aim of continuing with the current conversation. Once more it represents a sign of social reciprocity and ability to cooperate with his peers in the activities in the program.

Discussion

According to the results obtained from the observed sessions, there is an improvement of the relations between the observed child and his peers during the development of the intervention in the program. In the third session, the focal student presents a higher frequency on those conducts related to an answer, which denotes that the student is receptive to the group, he pays more attention to their requirements and shows more interest in interacting with the others. Also, the rate of starts of interaction from his peers has increased, which indicates the group is more interested in interacting with the participant.

In the evaluation of the mechanisms where the observational instrument is based, it is confirmed the improvement of this child since positive patterns that shows the presence of this processes are obtained. According to Flores and Santoyo (2009) these mechanisms are behavioural indicators which show the influence that the social act of a child has on the behavior of the other since it is possible to observe if the beginning of one interaction led him to interact with another and in what proportion. The three mechanisms together assess whether the child is able to offer social resources to others and in what degree. Therefore, it is important not only to attend to the individual study of the mechanisms responsible for regulating social behavior, but also to the interrelation between these three factors together in order to to know if the child is able to offer social resources to

their peers and to what extent compared to them (Flores & Santoyo, 2009).

The first mechanism, *social effectiveness*, is observed in derivative patterns from the interaction with the classmates in work activities. For instance, in the pattern *FC-SI/CF-A* the focal student addresses an equal with the purpose of speaking about the homework and the classmate answers him properly. This pattern indicates that the group has reacted in a positive way before the approaches of the observed student.

In relation to the second process, social correspondence, at the end of the evaluation we obtained the appropriate pattern which indicates the presence of this process in the interactions of the focal student, when one of the peers approaches the focal student to work in any activity he answers in a positive way *CF-SI/FC-A*.

These results manifest the ability of the student to answer the demands of his classmates in the program.

The third process, *social reciprocity*, is found in the relation with his peers. There are bidirectional answers between focal student and the rest of the childeren while they are focus in the activity *FC-A/CF-A*. The high level of replies is due to the existence of conversations about the task, derivative of the joint work with his equals.

Therefore, while in the beginning the focal student did not get an answer from his peers with a high frequence, in the last session he succeeds and he is able to keep a fluent conversation which indicates an improvement in the three processes.

However, these positive results are only obtained in those interactions related with the session. The relations between the focal student and the group are mainly focussed on topics related with the activities and games they perform in the program where the focal student is improving his interaction with his peers. Although in general interactions, those which are not related with the program, he does not achieve an appropriate level of conversation with his classmates. There are not conversations about other topics not related to the sessions (like their hobbies, sports, their schools) which shows the re-

lations with his peers are appropriate but do not imply friendship between the observed student and children from his group.

There is a progress in the relations established between the focal student and his group of reference, which indicates the positive effect of the intervention implemented in the program from the second session. The observations from the three sessions show the student is more receptive to the group at the end of the program as well as his peers show more interest in him. There are also indicators of the proper functioning of the three mechanisms which regulate social interaction: social efectiveness, social correspondance and social reciprocity (Santoyo, 1996, 2006). However, he did not form a close friendship with his peers since the behavioral patterns obtained only refer to the task. So, it is an aspect which should be further developed with the child.

In reference to his behavior in the program, he shows interest in what he is doing and also in the topics and activities of the sessions. This fact, together with the absence of negative conducts, reflects a good adjustment in the group and an appropriate behavior in the educational enviroment.

The results from the intervention are promising, although they have some limitations. In first place, the effect of the intervention is not immediate. The improvement in the focal student is not seen until the third session; therefore, several sessions are required to achieve changes in the group.

Another limitation is that this is an idiographic study, so only a focal student is observed. To replicate the results it would be necessary to do the same study with a more demanding design, like a multiple baseline design.

However, this study is an example of how important and useful is to measure social behaviors through observation (Díaz & Cadenas, 2016; Navarro, Rodríguez-Naveiras, López-Aymes, & Cadenas, 2015). The relevance of the social context in enrichment programs has already been pointed out by authors such as Coleman (2014), who emphasizes the importance of the social enviroment in evaluating the benefits of these programs.

Usually the results of an intervention are assessed through questionnaires, but there are other alternatives, like observation, which allow studying what happens in the natural context where the intervention is being performed. And, what is more important, it is possible to measure the changes in the behaviors we are studying. Through observation we can obtain accurate descriptions of the interactions of one participant within the group and measure non-verbal behaviors (Anguera, 1990). This allows a complete analysis of the whole situation which implies we can detect the origin of the problems and decide how act and which strategies should be implemented to solve them.

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