



Instructions for authors, subscriptions and further details:

<http://remie.hipatiapress.com>

Promoting Social Interaction and Attention of Students with Disabilities through Interactive Groups

Rocío García-Carrión^{1,2}, Prudencia Gutiérrez Esteban³, Aitana Fernández Villardón¹ Desirée Ayuso Del Puerto³

- 1) Universidad de Deusto
- 2) Ikerbasque. Basque Foundation for Science
- 3) Universidad de Extremadura

Date of publication: June 15th, 2023

Edition period: June 2023 – October 2023

To cite this article: García-Carrión, R., Gutiérrez Esteban, P., Fernández Villardón, A., & Ayuso-Del Puerto, D. (2023). Promoting Social Interaction and Attention of Students with Disabilities through Interactive Groups. *Multidisciplinary Journal of Educational Research*, 13(2), 248-271. <http://dx.doi.org/10.447/remie.12360>

To link this article: <https://doi.org/10.17583/remie.12360>

PLEASE SCROLL DOWN FOR ARTICLE

The terms and conditions of use are related to the Open Journal System and to [Creative Commons Attribution License \(CC-BY\)](#).

Promoting Social Interaction and Attention of Students with Disabilities through Interactive Groups

Rocío García-Carrión
University of Deusto
Ikerbasque. Basque Foundation
for Science

Prudencia Gutiérrez Esteban
University of Extremadura

Aitana Fernández Villardón
University of Deusto

Desirée Ayuso Del Puerto
University of Extremadura

(Received: 11th May 2023; Accepted: 28th May 2023; Published: 15th June 2023)

Abstract

Academic learning and social skills are internalized through interactions and dialogue. However, students with disabilities have limitations in engaging in social interactions that affect their educational experience. This case study explores how a particular interactive learning environment, called interactive groups (IGs), fosters quality interactions among students with disabilities. Five sessions of IG involving 20 students with disabilities in a special education setting were analysed. In total, 5831 interactions among the students were coded based on verbal and nonverbal communication. In addition, interviews with teachers and volunteers and a focus group with students were conducted. The results show a high presence of attentional engagement towards the task along with increased helping interactions. Benefits in terms of social skills and curricular development that can foster the acquisition of adaptive behaviours are identified.

Keywords: social interaction, intellectual disabilities, special educational needs, interactive groups

Promoviendo la Interacción Social y la Atención del Alumnado con Discapacidad a través de los Grupos Interactivos

Rocío García-Carrión
Universidad de Deusto
Ikerbasque. Basque Foundation
for Science

Prudencia Gutiérrez Esteban
Universidad de Extremadura

Desirée Ayuso Del Puerto
Universidad de Extremadura

Aitana Fernández Villardón
Universidad de Deusto

(Recibido: 11 Mayo 2023; Aceptado: 28 Mayo 2023; Publicado: 15 Junio 2023)

Resumen

El aprendizaje académico y las habilidades sociales se internalizan a través de las interacciones y el diálogo. Sin embargo, los estudiantes con discapacidades suelen presentar limitaciones en interacciones sociales, algo que afecta su experiencia educativa. Este estudio de caso analiza cómo un entorno de aprendizaje interactivo en particular, los Grupos Interactivos (GI), fomenta las interacciones de calidad entre estudiantes con discapacidad. Para ello, se analizaron cinco sesiones de GI en las que participaron 20 estudiantes con discapacidad en un centro de educación especial. En total, se codificaron 5831 interacciones de dichos estudiantes en base a la comunicación verbal y no verbal. Además, se realizaron entrevistas con profesorado y voluntarios/as, y un grupo de discusión con los/as estudiantes. Los resultados muestran una alta presencia de atencional mantenida hacia la tarea, junto con un aumento de las interacciones de ayuda. También, se identifican beneficios en términos de habilidades sociales y desarrollo curricular, favoreciendo la adquisición de conductas adaptativas.

Palabras clave: Interacción social, Discapacidad intelectual, Necesidades Educativas Especiales y Grupos Interactivos

Achieving a quality and inclusive education for all is crucial for reducing inequalities and fostering more peaceful societies (United Nations, 2015). Educational can contribute to advancing this objective through the implementation of evidence-based inclusive practices (Van Miegheem et al. 2020). Inclusive education aims to improve the quality of the social and psychological integration of students with disabilities in both the educational system and society (Yousif et al. 2021). However, despite its benefits, inclusive education remains a challenge for many education systems, and not ensuring an inclusive context has negative consequences for students, such as low academic performance and self-confidence (Fitch, 2002; Fisher et al. 2002). Addressing this challenge requires the creation of educational contexts that foster dialogue as one of the key actions for achieving an inclusive school, in addition to teachers who can act as agents of transformation (Howes et al. 2011). According to the European Commission (2013), inclusive classrooms must also ensure safe and supportive learning environments for students with special educational needs.

Classrooms and schools can play a major role in creating optimal learning environments that foster inclusion and social cohesion in education. European research has shown the benefits of successful educational actions (SEAs) that have been implemented in different classrooms and have resulted in academic improvement and social cohesion for all students in schools and communities across cultural and national contexts (Flecha, 2015). These SEAs were identified by the INCLUD-ED project, research in socioeconomic sciences and humanities that has been highlighted as being among the ten most successful projects in European research because of its social impact (European Commission, 2011). Further research has demonstrated how these actions have a positive impact on improving both academic results and the socialization of students by encouraging interaction and fostering dialogic interactions in curricular tasks (García-Carrión & Díez-Palomar, 2015). Although these SEAs have been implemented and replicated across many diverse contexts (Garcia-Carrion et al. 2017), a research synthesis shows that most studies have focused on exploring their potential benefits for learning and social relationships among students without disabilities (Morlà-Folch et al. 2022). Other studies have reported

better learning opportunities for students with disabilities in special schools when implementing SEAs (García-Carrión, et al., 2018). These learning environments encourage students with disabilities in regular schools to engage in dialogue and participation in the learning process (Duque et al. 2020; Molina-Roldán, 2015).

This approach aligns with a wide array of research that also supports the benefits of interactive learning environments that foster supportive relationships for children's learning and development (Masek et al. 2021). In particular, cooperation-based activities have a notable impact on learning and communication (Peters et al. 2013; Zuluaga-Lotero et al. 2015). In these contexts, quality interactions also have a high impact on the development of students with disabilities, such as the use of interactive strategies to encourage writing (McCloskey, 2012) or reading (Whalon et al., 2011). Specifically, the organization of students into small groups provides them with communication and social strategies based on cooperation (Bock, 2007; Lane et al. 2003) by teaching functional words to students (Lane et al. 2015) or by using augmentative and alternative communication (Andzik et al. 2016).

Although specific interventions in the classroom matter, research has also emphasized that interactions between students or between students and teachers/parents are crucial for developing students' social development and promoting inclusion (Santos et al. 2016; Schwab, 2015). In addition, considering and exploring students' perspectives and views on inclusive practices is particularly relevant (Nowicki & Brown, 2013). Michael et al. (2007) highlight the importance of promoting joint actions with the entire educational community to achieve educational inclusion. This aligns with Epstein's (1996) theory of "overlapping spheres of influence", in which the benefits derived from the active incorporation of community members in school are highlighted to improve students' academic and social development through the establishment of support networks that favour inclusion. Therefore, considering the school as a learning community is a conducive model to achieve academic and social improvements by involving families and members from the community as central agents in everyday school life (Soler et al. 2019).

Within this conception, schools as learning communities are an inclusive model of schooling that involves family and community members in the implementation of successful educational actions, such as improving learning and social cohesion to achieve educational transformation (García-Carrion et al. 2017). For this purpose, these schools adopt the dialogic learning concept (Flecha, 2000), which follows the premise that dialogic interactions involving the entire community are at the basis of learning and development (Gatt et al. 2011). This conception builds on the sociocultural theory of cognitive development, which emphasizes the social activity of the child in the internalization of cultural forms and procedures of thought (Vygotsky, 1978). Accordingly, learning takes place first in the social context that arises from interaction during teaching activities guided by another person from the educational community and not only by teachers (Rogoff & Mejía-Arauz, 2022).

However, not all interactions lead to effective internalization of knowledge and learning. For this reason, engaging in productive dialogue for learning and within interactive activities that lead to positive results is essential for successful development (García-Carrión et al. 2020). Interactive groups (IGs), which have been identified as successful educational actions (Flecha, 2015), have proven their effectiveness in different contexts and educational settings (Aubert et al. 2017; Valls & Kyriakides, 2013). They have contributed to an increase in helping and solidarity interactions (Khalfaoui, et al. 2020) as well as academic success among vulnerable students (Valero et al. 2018). In particular, research has identified strategies to implement IGs effectively in special education settings (García-Carrión et al. 2018). Nonetheless, research on IG in this context is underdeveloped. In particular, the type of interactions that arise in these groups and the benefits they bring are underexplored. Given the need to analyse the transferability of these actions to a special education setting, this case study analyses which interactions emerge when interactive groups of students with disabilities are implemented in a special school as well as the perceptions of students, teachers, and volunteers in these groups.

Methodology

An instrumental case study (Stake, 1995) was conducted with the aim of gaining an in-depth understanding of the interactions that arise in interactive groups in a special school serving students with disabilities. This study was framed within a larger research project, INTER-ACT (Interactive Learning Environments for the Inclusion of Students with and without Disabilities: Improving Learning, Development, and Relationships (García-Carrión 2018-2021)). The main objective of this project was to assess the impact of interactive learning environments on the learning, development, and relationships of students with disabilities and to examine the conditions that may increase this impact. For this case study, we focus on the types of interactions in which students with disabilities engage when participating in interactive groups.

Procedure and Participants

The study was conducted in a special school located in the southern area of Spain (Andalusia). This case was selected because it had previously demonstrated successful progress in the preparation of academic, social, and personal competence according to internal school evaluations. Particularly, they reported students performed better over the years in their basic and social skills since 2012-2013 where school change their pedagogical approach to join the network “Schools as Learning Communities”. Then, it started to implement Successful Educational Actions and involved family and community members in classrooms and other school spaces. In particular, the school organized the classrooms into interactive groups at least twice a week per class.

When interactive groups are implemented, lessons are organized in small heterogeneous groups of students who work together on a learning activity (García Carrión et al. 2018). In these groups, which normally consist of 4-5 students, curricular activities are completed by relying on peer interaction and mutual help. A main characteristic of these groups is the support of an adult volunteer from the community who facilitates peer interactions. In this case, volunteers from the neighbourhood, university or families participated in the implementation of IG.

Students enrolled at this school present several disabilities and special educational needs, including autism spectrum disorders, cerebral palsy, severe behavioural disorders, rare diseases, and severe intellectual disabilities. Generally, students have specific language disorders (except students with behavioural disorders). Participants in the groups observed had a diverse profile, including behavioural disorders, autism spectrum disorder and intellectual disability.

The observations were conducted in two rounds between September-February 2019-2020, and the following groups were recorded: 2 IGs from the basic education period with 8 students aged between 6 and 18 and 3 IGs in training for the transition to adult and working life courses with 12 students aged 16 to 20 (see Table 1 for more information).

Ethical principles in accordance with the European Commission Ethics for researchers (2013) were followed. Additionally, the research had ethical approval from the Ethics Committee of the University with number ETK-42/18-19. To ensure the ethical integrity of the research process, full details of the study objectives and procedures were explained to the participants (adapted to each cognitive level), teachers and families prior to starting the study. Informed consent was signed by all the participants (teachers, volunteers, students, and their legal guardians). All participants' names have been replaced with pseudonyms.

Data Collection

Five interactive groups with 4 students in each group (20 in total) were recorded, transcribed, and quantitatively analysed to explore the interactions that arose in the groups. In these interactive group observations, the groups were from the basic education classroom (n=2) and were working on curricular activities such as vocabulary or mathematics. The other 3 groups, which were observed in Training for the Transition to Adult and Working Life courses, were working on daily activities and adaptive skills (see Table 1). These groups were completed by relying on peer interaction and mutual help. In these cases, neighbors, university students or families volunteered with the groups.

Qualitative data were collected through interviews and focus groups to gather participants' perceptions about the impact of IGs due to the

importance of retrieving qualitative information when researching in the field of special education. Specifically, five interviews were conducted with teachers, the head teacher, the deputy head and four volunteers (family of a participant student, a student from the university and a person from the community). A focus group was also conducted with the students (n= 5). The protocol for the interviews included questions to examine the strategies used by the teachers and volunteers for the successful development of these actions and the improvements observed throughout the implementation of IG. Information regarding the data collection techniques and participants is presented in Table 1.

Table 1.

Participants and data collection techniques

Data collection technique	Participants
<i>Observation IG</i>	4 students (2 girls, 2 boys) – Basic Education course - working vocabulary
	4 students (2 girls, 2 boys) – Basic Education course - working vocabulary
	4 students (2 girls, 2 boys) - Training for the Transition to Adult and Working Life- working daily actions
	4 students (1 girl, 3 boys)- Training for the Transition to Adult and Working Life – working vocabulary
	4 students (2 girls, 2 boys)- Training for the Transition to Adult and Working Life- working vocabulary
<i>Interview</i>	1 teacher - Training for the Transition to Adult and Working Life
	2 teachers – school principal and study coordinator
	2 volunteers (a mother and a brother of a participant)
	1 volunteer (a student from the university)
	1 volunteer (a woman from the neighbourhood)
<i>Focus Group</i>	5 students - Training for the Transition to Adult and Working Life

Data Analysis

Interactive group observations. The video-recorded observations were transcribed and analysed verbatim. The analysis included all the interactions among the students, both verbal and nonverbal, and the transcripts followed the “Transcription Notation” guide (Jefferson, 1984). The transcripts were then coded for each participant in the group. Each transcribed interaction was coded deductively according to a previously established categories as follows: 1) engagement in the task, 2) the type of verbal interaction and 3) the nonverbal interaction of each student. For this purpose, a template was created in which each interaction (rows) was coded for each student (columns). This coding was carried out based on the previously mentioned main categories of 1) attention towards the task, 2) verbal interaction and 3) nonverbal interaction (see Table 2). These main categories were not mutually exclusive, and they were coded independently. Within them, subcategories were defined that were mutually exclusive. This allowed us to capture students’ engagement in the task in addition to verbal and behavioural interactions.

Table 2.
Interaction Coding Scheme

Attention towards the task	Verbal interaction	Non-verbal interaction
On task	Engaging in a conversation	Observing behavioural interaction
Off task	Reasoning	Working with material
	Reading	Engagement
	Agreement/Disagreement	Agreement/Disagreement
	Help	Helping behaviour
	Disruptive verbal interaction	

After coding each interaction for each student based on the variables described above, statistical analyses were conducted using SPSS statistical software. First, we considered the percentage of students immersed or not immersed in the task (attention towards the task coding). Second, from these

on-task interactions, the percentages of frequency of the different types of verbal and nonverbal interactions were calculated.

Interviews and focus groups. The interviews and focus groups were transcribed and subsequently analysed deductively using the categories included in Table 3 with the aim of collecting teachers', students', and volunteers' perceptions of the impact of the interactive groups on the participant students. These categories refer to students' outcomes considering developmental, curricular, and social outcomes or any other improvement perceived by the participants. Each of these categories was divided into transformative and exclusionary dimensions to collect both the positive and enabling aspects and the negative aspects.

Table 3.

Categorization of interviews and Focus Groups

Outcomes	Dimension
Development	Exclusionary / Transformative
Curricular	
Socialization	
Other improvements	

Results

The quantitative results show that sustained attention, helping interactions, social communication and curricular development occurred in the interactive groups implemented in the participating school. These main outcomes are consistent with the qualitative data from the participants acquired in the study.

In terms of quantitative data, 5831 interactions were transcribed and codified from 20 students during 5 sessions of the interactive group. During these sessions, 87% of the interactions were coded as on task. In these interactions, students were focused on the activity and maintained diverse types of verbal or nonverbal communication, as reported in the figures below (Figures 1 and 2).

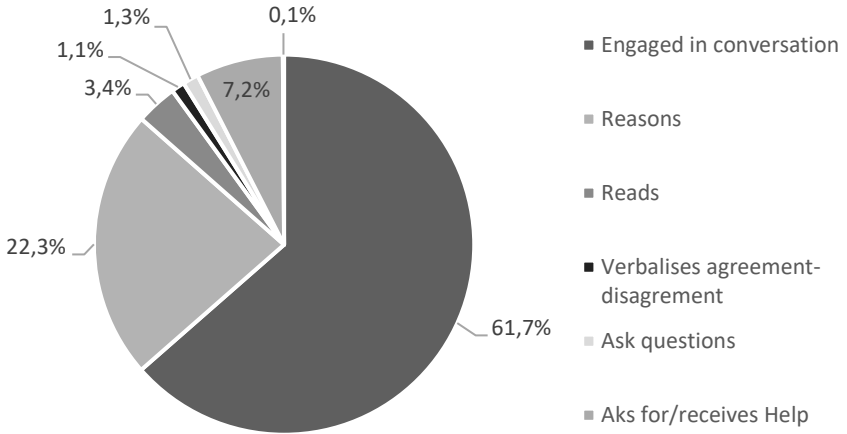


Figure 1. Verbal interaction

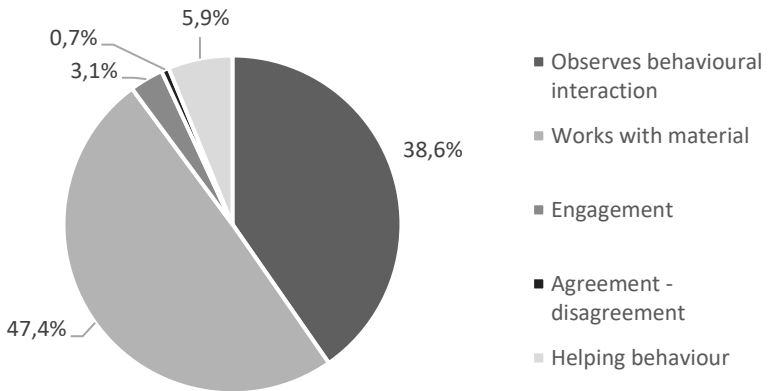


Figure 2. Behavioural interaction

Benefits in Attention

As mentioned above, students' attention was maintained most of the time when working together and being supported by the volunteer's facilitation (87% of the interactions). In 62% of these interactions, students were engaged in conversation by listening and paying attention to others' verbal interventions. In addition, 39% of the time the students were observing others' behaviour, and in almost half of these nonverbal interactions, students were working with the material.

Both teachers and volunteers reported the maintenance of attention as characteristic of the IG. Particularly, one of the teachers stated the positive impact of working jointly on the task because if these students work individually in a monologic classroom where teacher talk prevails, maintaining their attention is more difficult:

Teacher interview_1: One of the improvements we perceive the most is attention, for example. When they have to work individually, they maintain their attention for a very short time, and they get distracted for a moment. Here, they maintain their attention for an hour, they also make a better use of time and then they have more continuity in the activities.

This improvement was also identified by the people from the neighborhood who participated in the IG as volunteers. They linked this attentional improvement to the motivation that students showed towards the activity. Thus, an increase in motivation resulting from sustained engagement in the activity helps to keep students' attention on task. In the following quotation, a woman whose son was enrolled in the school highlighted the importance of being motivated and engaged, which rarely occurs with these students in noninteractive environments:

Volunteer interview_2: [I noticed an improvement] in attention, especially in attention. I have seen this in the children's development. They are more motivated to do the activity [in IG]; that is what I have seen. If you do not motivate a child who has attention deficit, that

doesn't work. Just going to school to have only a teacher explain—the child cannot be engaged at all.

Fostering Helping Behaviours

Regarding help and respectful interactions, our data showed that 7.2% of verbal interactions and 6% of nonverbal interactions were related to seeking or providing help. Students reported offering and receiving help and support in the IG and how this engagement helped them internalize curricular content, for example, when learning mathematics. These supportive relationships enabled the creation of an inclusive environment characterized by “harmony” and “peace”, as the participants stated. Furthermore, students in the focus groups perceived the groups as exciting and encouraging:

Student Focus Group_1:

-Hector: Interactive groups communicate with each other separately, and we have to grow or learn more from our peers, help them, lend them a helping hand. And we also must have companionship with each other.

-Aitor: We learn to work in group, in harmony, with no peace or war... and to love.

-Asier: Because the group is more united instead of separated. All groups come together, and we prefer to stay in a group instead of being separated because separated we get bored, we can't talk. With the group, we can.

-Aitor: In mathematics, the calculation. Because if someone is struggling, knowing myself that I can do it and it takes more effort to the other person, I like helping them with that, with mathematics.

-Asier: To divide.

-Jon: If there is someone who doesn't know, this way I help them and learn with them.

A mother who volunteered in these groups pointed out the helping relationships that are developed in the interactive groups. In particular, she highlighted the transformation that her son (a student with severe intellectual disability) experienced by participating in this activity. Developing helping

skills is also necessary for adaptative social competence. This mother stated that her son had changed from being a shy person to displaying more sociable behaviour and, specifically, learning to communicate and to help:

Volunteer Interview_2: They help each other quite a lot. I tell you this because my son is not an extroverted child; he is very introverted, and they help each other quite a lot. He has also learned to help, he has learned to communicate in a good way, to help, he is much more sociable with others. I previously saw him more closed, but now they help each other a lot.

These helping interactions did not remain only in IGs but were transferred to other contexts, such as more informal environments (the playground and other extracurricular activities) and beyond school. The transferability of these interactions to other contexts indicates the potential of these groups to internalize the behaviours and learning they experienced in IGs. Another teacher noted transformations of the overall school environment due to the interactive groups:

Teacher interview_1: I mean, attitudes and behaviours that are learned inside the interactive groups, such as respect, have started to occur in other places. In the playground, they also engage in that type of interaction. Therefore, they will then transfer that to other contexts as well since they are able to self-regulate in other contexts beyond school. I think that is very important and that happens because of the interactive group.

Enhancing Social Skills

Improvements related to social skills were also perceived. In particular, the internalization of normalized behaviours and self-regulation were observed by the teachers. Likewise, verbalization of agreement and disagreement was identified in the quantitative data from the sessions, which is critical in social interactions.

Acquiring a social competence level corresponding to their age is especially challenging for students with disabilities who attend a special

school. Involving volunteers from the community in IGs emerged as a crucial aspect for students to become familiar with other interactions and behaviours. This teacher noticed how the IGs helped students develop self-control and acquire more adaptative skills:

Interview teacher_1: I see that it normalizes, I mean, in those groups they get normalized abilities and adaptive skills that are commonly acquired by others but are rarely developed by them. Therefore, through interaction, what I see is that they acquire abilities such as self-control, being focused, the possibility of having more waiting time, respecting their classmates, because some used to go, ‘Me, me’.

Moreover, aspects such as self-regulation or aggressive behaviours were addressed in these groups as the students themselves helped each other relax and not be nervous, as another teacher stated:

Interview teacher_2: Well, here we also have boys and girls with behavioural problems; however, in the last interactive groups, they self-regulated a lot. It is true that the rest of the members of the group activate them because they know each other, when one of them gets nervous, they say: ‘Don’t get nervous, relax, now we have to do this’.

Curricular Development

The quantitative data show that 22.3% of the utterances showed students’ reasoning, including words such as “because”, “I mean”, and “that is”, among others. Discussing others’ perspectives and arguments in this IG generated a collective understanding of others as well as critical awareness and promoted cognitive development.

The potential of IGs for curricular learning is identified in the following quotation. They enable students to internalize specific academic content through dialogic interactions. This is linked with the interactions observed, which revealed that 38.6% of nonverbal interactions occurred while students were working with the material, while 3.4% of the interactions occurred in the group while reading.

Interview teacher_2: I think that the personal learning obtained by the students from the interactive groups, the learning about a specific subject, the activity we are working on—but also personally, what they get on a personal level, how they improve their self-esteem, how they improve their empathy. For me, that is essential.

This development of academic learning along with the acquisition of other social skills may have an impact on students' self-esteem, which was also improved when they participated in interactive groups.

These results, both quantitatively observed and qualitatively perceived by the participants, show the potential of interactive groups in the development of students with disabilities. Specifically, we have identified the potential of this intervention for students' attention maintenance and engagement as well as the acquisition of curricular content. Interactive groups may promote the acquisition of social and adaptative skills by developing helping and respectful behaviours.

Discussion and Conclusions

The implementation of Interactive Groups with students with disabilities promotes attention and engagement towards the task, exposing reasoning and reading actions during the Interactive Groups. This aligns with the perception of educational practitioners, stating benefits in curricular development when students participate in these groups. Besides, helping behaviours are observed across the IG, as well as social and relational interactions, fostering the acquisition of adaptative social skills.

On the one hand, results confirm that children with disabilities tend to be involved in the academic task when implementing Interactive Groups. Considering the limitations that students with disabilities have for maintaining attention in academic tasks (Sterr, 2004; Morgan et al. 2011), our results report the potential benefits of IG for these students' learning and their development. As previous research has shown, attention and engagement in school tasks is closely related to students' participation in the classroom (Tasgin & Tunc, 2018) as well as future professional goals (James et al. 2022). Therefore, allowing and encouraging student talk by toppling

the traditional teacher domination in the classroom (Hargreaves & García-Carrión, 2016), enables the creation of an inclusive learning environment.

This study shows how, in Interactive Groups, students with disabilities justify their opinions and help their peers, by explaining the academic content. So, organizing students in small heterogeneous groups facilitated by another adult who encourages an egalitarian dialogue, allow them to express their opinions and develop their reasoning and argumentation skills. In this line, reasoning verbal interactions have been also observed by previous research when transferring this kind of interactive learning environment to special education (involving the whole class in a group), where students learned to provide arguments and points of view in a respectful way (Fernández-Villardón et al. 2021). The increased participation and involvement of students in this class disposition fosters maintained- attention towards academic activity. These outcomes are possible when following dialogic principles, which promote the internalization of learning and, therefore, a quality education for all (García-Carrión et al. 2020).

Moreover, helping interactions towards peers have been observed during IG, also identified by the students and volunteers that participate in the groups. Fostering the acquisition of helping interactions is necessary because of its relationship to adaptation to social environments (O'Connor et al. 2019), as well as for promoting an adequate development and learning (Nelson et al. 2016). Likewise, these helping interactions involve reasoning verbal interactions and listening to peers' verbal communication, which function as key elements to facilitate students to learn how to argue and pose to other opinions', creating opportunities to increase their social and emotional awareness. Interactive Groups, that are based on supportive interactions among participants (Aubert et al. 2017), had previously demonstrated the potential of developing help relationship among participants across different ages and vulnerable contexts (Valls & Kyriakides, 2013; Khalfaoui et al. 2020). Besides, when implementing this specific supportive and respectful environment, prosocial behaviour and thinking is enhanced (Villardón-Gallego et al. 2018; García-Carrión et al. 2020).

Finally, it must be highlighted that the interactions emerged in this study have not been limited to the activity, but they have been transferred to other

contexts. This is consistent with previous scientific research that also reported how the helping interactions learned in the Interactive Groups in a special school led to a fostering help behaviours, care and friendship in other diverse contexts (García-Carrión et al. 2018). These findings conclude the possibility that students in special education settings have the possibility to acquire normalized behaviours, as shown by other research in this context (Minkos et al., 2022).

This research has some limitations that must be taken into consideration in the interpretation of results. On the one hand, this is an in-depth case study with a small sample which analyses in-depth the interactions that emerge in a specific special education classroom with no control-group, so the results cannot be generalised. Taking these limitations into account, future research could examine in-depth how interactions and relationships between peers evolve over time when working in interactive groups, by conducting a longitudinal study or using a cross-life span approach. This can be particularly important for the lives of people with intellectual disabilities. In addition, the impact of this intervention on other psychological and/or social variables, such as self-efficacy or student's mindset, could provide further insights to better understand how IG can shape their thinking and attitudes towards learning.

With the aim of achieving quality and inclusive education, educational research can inform teachers and practitioners to design learning environments where quality interactions prevail. Hence, in Interactive Groups, students with disabilities can benefit from peer discussion and joint participation to foster learning and development (Ugalde et al. 2021). Despite the barriers they may encounter to participate in the dialogue, either in ordinary or in special schools, research shows that Interactive Groups create affordances for these students to engage in meaningful interactions and supportive relationships. In doing so, we might advance towards the global objective of a quality and inclusive education for all.

References

Andzik N. R., Chung Y. C. & Kranak M. P. (2016). Communication Opportunities for Elementary School Students who use

- Augmentative and Alternative Communication. *Augmentative and Alternative Communication* 32, 272-281.
<https://doi.org/10.1080/07434618.2016.1241299>.
- Aubert A., Molina S., Shubert T. & Vidu A. (2017). Learning and inclusivity via Interactive Groups in early childhood education and care in the Hope school, Spain. *Learning, Culture and Social Interaction* 13, 90-103. <https://doi.org/10.1016/j.lcsi.2017.03.002>.
- Bock M. A. (2007). A social-behavioural learning strategy intervention for a child with Asperger syndrome: Brief report. *Remedial and Special Education* 28, 258-265.
<http://dx.doi.org/10.1177/07419325070280050101>
- Duque E., Gairal R., Molina S. & Roca E. (2020). How the Psychology of Education Contributes to Research with a Social Impact on the Education of Students with Special Needs: The Case of Successful Educational Actions. *Frontiers in Psychology* 11, 1-16.
<https://doi.org/10.3389/fpsyg.2020.00439>
- Epstein J. L. (1996). Perspectives and previews on research and policy for school, family, and community partnerships. In: *Family-school links: How do they affect educational outcomes?* (Eds A. Booth & J. F. Dunn), pp. 209–246. Routledge.
- European Commission (2011). *The added value of EU research, innovation and science portfolio*. European Commission. <https://bit.ly/3VBYpkj>
- European Commission (2013). *Support for children with special educational needs (SEN)*. European Commission. <https://bit.ly/2WNszWQ>
- Fisher D., Roach V. & Frey N. (2002). Examining the general programmatic benefits of inclusive schools. *International Journal of Inclusive Education* 6, 63-78. <https://doi.org/10.1080/13603110010035843>.
- Fitch E. F. (2002). Disability and inclusion: From labeling deviance to social valuing. *Educational Theory* 52, 463-477.
<https://doi.org/10.1111/j.1741-5446.2002.00463.x>.
- Flecha R. (2015). *Successful Educational Actions for inclusion and Social Cohesion in Europe*. Springer.
- Flecha R. (2000). *Sharing words: Theory and practice of dialogic learning*. Rowman & Littlefield.
- García-Carrión, R., & Díez-Palomar, J. (2015). Learning communities: Pathways for educational success and social transformation through interactive groups in mathematics. *European Educational Research*

Journal, 14(2), 151-166.

<https://doi.org/10.1177%2F1474904115571793>

- García-Carrion, R., Gomez, A., Molina, S., & Ionescu, V. (2017). Teacher education in schools as learning communities: Transforming high-poverty schools through dialogic learning. *Australian Journal of Teacher Education*, 42(4), 44-56.
- García-Carrión, R., Molina Roldán, S., & Roca Campos, E. (2018). Interactive learning environments for the educational improvement of students with disabilities in special schools. *Frontiers in psychology*, 9, 1744.
- García-Carrión, R., López de Aguilera, G., Padrós, M., & Ramis-Salas, M. (2020). Implications for social impact of dialogic teaching and learning. *Frontiers in psychology*, 11, 140.
- Gatt S., Ojala M. & Soler M. (2011). Promoting social inclusion counting with everyone: Learning Communities and INCLUD-ED. *International Studies in Sociology of Education* 21, 33-47.
- Hargreaves, L., & García-Carrión, R. (2016). Toppling teacher domination of primary classroom talk through dialogic literary gatherings in England. *FORUM*. 58 (1) ,15-25.
- Howes A.J., Grimes P. & Shohel M.M.C. (2011). Imagining inclusive teachers: contesting policy assumptions in relation to the development of inclusive practice in schools. *Compare* 41, 615-628. <https://doi.org/10.1080/03057925.2011.574969>
- James, M. B., Williams, S. C., Hock, M. F., Inlow, J. S., Moore, D. A., & Jones, J. T. (2022). Exploring expressions of possible selves with High School and College Students with learning disabilities. *International Journal of Educational Psychology: IJEP*, 11(2), 207-236.
- Jefferson G. (1984). Transcription Notation. In: *Structures of Social Action: Studies in Conversation Analysis* (eds M. Atkinson & J. Heritage), pp. 9-16. Cambridge University Press.
- Khalfaoui A., García-Carrión R., Villardón-Gallego L. & Duque E. (2020). Help and Solidarity Interactions in Interactive Groups: A Case Study with Roma and Immigrant Preschoolers. *Social Sciences* 9, 116. <https://doi.org/10.3390/socsci9070116>.
- Lane J. D., Gast D. L., Shepley C. & Ledford J. R. (2015). Including Social Opportunities During Small Group Instruction of Preschool Children

with Social-Communication Delays. *Journal of Early Intervention* 37, 3–22. <https://doi.org/10.1177/1053815115588828>.

- Lane K. L., Wehby J., Menzies H., Doukas G. L., Munton S. M. & Gregg R. (2003). Social skills instruction for students at risk for antisocial behavior: The effects of small-group instruction. *Behavioral Disorders* 28, 229–248. <https://doi.org/10.1177/019874290302800308>.
- Masek, L. R., McMillan, B. T., Paterson, S. J., Tamis-LeMonda, C. S., Golinkoff, R. M., & Hirsh-Pasek, K. (2021). Where language meets attention: How contingent interactions promote learning. *Developmental Review*, 60, 100961.
- McCloskey E. (2012). Inclusion as an instructional approach: Fostering inclusive writing communities in preschool classrooms. *Journal of Early Childhood Literacy* 12, 46–67. <https://doi.org/10.1177/1468798411416790>.
- Michael S., Dittus P. & Epstein J. (2007). Family and community involvement in schools: Results from the school health policies and programs study 2006. *Journal of School Health* 77, 567–587. <https://doi.org/10.1111/j.1746-1561.2007.00236.x>
- Minkos, M. L., Winter, E. L., & Trudel, S. M. (2022). Adaptation of Universal Behavioral Supports Within an Alternative Education Setting. *The Journal of Special Education*, 0(0). <https://doi.org/10.1177/00224669221140568>
- Molina-Roldán S. (2015). Alba, a girl who successfully overcomes barriers of intellectual disability through dialogic literary gatherings. *Qualitative Inquiry* 21, 927–933. <https://doi.org/10.1177/1077800415611690>
- Morgan M. F., Cuskelly M., & Moni K. B. (2011). Broadening the conceptualization of literacy in the lives of adults with intellectual disability. *Res. Pract. Persons Severe Disabl* 36, 112–120. <https://doi.org/10.2511/02749481180082451>
- Morlà-Folch, T., Davis, A. I. R., Cuxart, M. P., & Valls-Carol, R. (2022). A research synthesis of the impacts of successful educational actions on student outcomes. *Educational Research Review*, 100482.
- Nelson S. K., Layous K., Cole S. W. & Lyubomirsky S. (2016). Do unto others or treat yourself? The effects of prosocial and self-focused behavior on psychological flourishing. *Emotion* 16, 850. <https://doi.org/10.1037/emo0000178>

- Nowicki E. A. & Brown J. D. (2013). “A kid way”: Strategies for including classmates with learning or intellectual disabilities. *Intellectual and developmental disabilities* 51, 253-262.
<https://doi.org/10.1352/1934-9556-51.4.253>
- O'Connor R. A., Stockmann L. & Rieffe C. (2019). Spontaneous helping behavior of autistic and non-autistic (Pre-) adolescents: A matter of motivation? *Autism Research* 12, 1796-1804.
<https://doi.org/10.1002/aur.2182>
- Peters B., Forlin C., McInerney D. & Maclean R. (2013). Social interaction and cooperative activities: Drawing plans as a means of increasing engagement for children with ASD. *International Journal of Whole Schooling* 9, 61-86. <https://bit.ly/3u7c9HT>
- Rogoff, B., & Mejía-Arauz, R. (2022). The key role of community in Learning by Observing and Pitching In to family and community endeavours. *Journal for the Study of Education and Development*, 45(3), 494-548.
<https://doi.org/10.1080/02103702.2022.2086770>
- Santos G. D., Sardinha S. & Reis S. (2016). Relationships in inclusive classrooms. *Journal of Research in Special Educational Needs* 16, 950–954. <https://doi.org/10.1111/1471-3802.12238>.
- Schwab S. (2015). Social dimensions of inclusion in education of 4th and 7th grade pupils in inclusive and regular classes: Outcomes from Austria. *Research in Developmental Disabilities* 43–44, 72–79.
<https://doi.org/10.1016/j.ridd.2015.06.005>.
- Soler M., Morlà-Folch T., García-Carrión R. & Valls R. (2019). Transforming rural education in Colombia through family participation: The case of school as a learning community. *JSSE- Journal of Social Science Education* 18, 67-80.
<https://doi.org/10.4119/jsse-3251>
- Stake R. E. (1995). *The Art of Case Study Research*. Sage.
- Sterr A. M. (2004). Attention performance in young adults with learning disabilities. *Learning and individual differences* 14, 125-133.
<https://doi.org/10.1016/j.lindif.2003.10.001>
- Taşgin A. & Tunc Y. (2018). Effective Participation and Motivation: An Investigation on Secondary School Students. *World Journal of Education* 8, 58-74. <https://bit.ly/3VgKjVw>
- Ugalde L., Santiago-Garabieta M., Villarejo-Carballido B. & Puigvert L. (2021). Impact of Interactive Learning Environments on Learning

and Cognitive Development of Children with Special Educational Needs: A Literature Review. *Frontiers in psychology* 12, 1-9.

<https://doi.org/10.3389/fpsyg.2021.674033>

United Nations (2015). *Sustainable Development Goals*. Retrieved from: <https://bit.ly/3fv9Wi9>

Valero D., Redondo-Sama G. & Elboj C. (2018). Interactive groups for immigrant students: a factor for success in the path of immigrant students. *International Journal of Inclusive Education* 22, 787-802. <https://doi.org/10.1080/13603116.2017.1408712>

Valls R. & Kyriakides L. (2013). The power of Interactive Groups: how diversity of adults volunteering in classroom groups can promote inclusion and success for children of vulnerable minority ethnic populations. *Cambridge Journal of Education* 43, 17-33. <https://doi.org/10.1080/0305764X.2012.749213>

Van Mieghem A., Verschuere K., Petry K. & Struyf E. (2020). An analysis of research on inclusive education: a systematic search and meta review. *International Journal of Inclusive Education* 24, 675-689. <https://doi.org/10.1080/13603116.2018.1482012>

Vygotsky L. S. (1978). *Mind in society: Development of higher psychological processes*. Harvard university press.

Villardón-Gallego L., García-Carrión R., Yáñez-Marquina L. & Estévez A. (2018). Impact of the interactive learning environments in children's prosocial behavior. *Sustainability* 10, 1-12. <https://doi.org/10.3390/su10072138>

Whalon K. & Hart J. E. (2011). Adapting an Evidence-Based Reading Comprehension Strategy for Learners with Autism Spectrum Disorder. *Intervention in School and Clinic* 46, 195-203. <https://doi.org/10.1177/1053451210389036>.

Yousif N. B. A., Youssef E. M. & Abdelrahman R. M. (2021). The Social and Psychological Effects of Inclusive Education of Persons with Hearing Disability in Society: A Field Study at the Disability Resource Centre. *Sustainability* 13, 1-16. <https://doi.org/10.3390/su132212823>.

Zuluaga-Lotero A. M., Arias-Gallo L. M. & Montoya-Gómez M. (2015). Proyecto mosqueteros: una propuesta de intervención en el aula para favorecer los procesos de inclusión escolar. *Pensamiento Psicológico* 14, 77-88. <https://doi.org/10.11144/Javerianacali.PPSI14-1.pmp>.

Rocío García Carión is Ikerbasque Associate at the University of Deusto
ORCID: <https://orcid.org/0000-0002-5520-5105>

Prudencia Gutiérrez Esteban is University Senior Lecturer at the University of Extremadura
ORCID: <https://orcid.org/0000-0001-5328-5319>

Aitana Fernández Villardón is Lecturer at the University of Deusto.
ORCID: <https://orcid.org/0000-0001-9690-022X>

Desirée Ayuso Del Puerto is Predoctoral Researcher with a contract for University Teacher Training (FPU18/03322) at the University of Extremadura
ORCID: <https://orcid.org/0000-0002-6290-7391>

Contact Address: Universidad de Deusto. Avda de las Universidades 24, 48007, Bilbao

Email: rocio.garcia@deusto.es