

# Body, narrative and play: an embodied intervention for inclusion and participation in lower secondary schools

Giovanna Scala <sup>1</sup>

<sup>1</sup> University of Campania Luigi Vanvitelli; scala.nina001@gmail.com

**Abstract:** This paper presents a quasi-experimental study conducted in a lower secondary school in Naples, aimed at analysing the effectiveness of an integrated educational intervention based on embodied education, gamification and digital storytelling. The intervention, carried out within the Italian language curriculum and centred on narrative text construction, involved 110 students from four Year 7 classes, divided into an experimental group and a control group. The study adopted a mixed-methods approach, integrating standardised tools for measuring engagement, motivation and sense of belonging to the school with semi-structured interviews with students and teachers. The quantitative results highlight a significant improvement in the experimental group compared to the control group, particularly in terms of participation, motivation and perceived inclusion. The qualitative analysis confirms these findings, showing how physical, narrative and digital activities have fostered student engagement and the accessibility of content, particularly for pupils with SEN attributable to linguistic disadvantage. The study suggests that the integration of body, play, storytelling and technology can represent an effective educational resource for promoting inclusive and multimodal learning environments.

**Keywords:** : Embodied education; inclusion; gamification; digital storytelling; secondary school



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## 1. Introduction

In recent years, the debate on pedagogy and teaching has increasingly called into question traditional, transmission-based models of teaching, which are founded on a predominantly cognitive and disembodied conception of learning. In their place, approaches are gaining ground that recognise the situated, relational and embodied nature of cognitive processes, emphasising how learning emerges from the dynamic interaction between mind, body and environment (Immordino-Yang, 2015; Gallagher & Lindgren, 2015). Within this framework, embodied education

emerges as a theoretical and methodological perspective capable of integrating dimensions often considered separately — cognition, emotion and action — restoring centrality to lived experience and the active role of the individual in educational contexts (Shapiro & Stolz, 2019; Rivoltella, 2021).

The fundamental premise of the embodied approach is that knowledge is not an abstract and decontextualised process, but takes shape through situated practices, mediated by the body and social interactions. From this perspective, the body is not merely a vehicle for learning, but an epistemic device through which individuals construct meaning, negotiate interpretations and develop skills (Gallese V., 2025; Barsalou, 2020; Gomez Paloma et al, 2024). This view appears particularly relevant in contemporary school contexts, characterised by high heterogeneity and complexity, where students have different needs, cognitive styles and modes of participation. Contemporary educational contexts can in fact be interpreted as complex adaptive systems, in which learning, relationships, teaching practices and inclusive dynamics emerge from the continuous interaction between the individual, the group, the institution and the local community. From this perspective, the quality of inclusion depends on the ability to interpret and manage these multi-level interactions in a flexible and reflective manner.

In this scenario, the issue of inclusion takes on a central role and is configured not merely as a normative or ethical objective, but as a structural and transformative principle of educational systems. Inclusion, in fact, implies the capacity of school contexts to recognise and value differences, removing barriers to participation and building learning environments that are accessible and meaningful for all (Ainscow, 2020; Ianes & Cramerotti, 2013). From this perspective, inclusion cannot be reduced to compensatory interventions or practices aimed at specific categories of students, but must be understood as a systemic process involving the interaction between the individual, the group, the institution and the local community (Booth & Ainscow, 2002; Florian, 2019; de Anna, L., & Covelli, A., 2021). From this perspective, inclusion can be interpreted as a transformative and systemic process, which does not concern solely the adaptation of the individual student to the school context, but the capacity of the entire educational ecosystem to rethink practices, relationships, languages and organisational mechanisms with a view to the participation of all.

The integration of embodied education and active teaching methodologies represents a promising response to these challenges. Approaches such as gamification and digital storytelling, in fact, offer practical tools capable of engaging students, sustaining motivation and fostering the shared construction of meaning. Gamification, through the introduction of playful dynamics (challenges, levels,

immediate feedback), promotes forms of active and cooperative participation, making learning more accessible and engaging (Deterding et al., 2011; Sailer & Homner, 2020). Digital storytelling, on the other hand, allows students to express their identity, rework experiences and construct meaningful narratives, fostering processes of inclusion and mutual recognition (Robin, 2016; Rapanta et al., 2021; Pentassuglia, G., 2024).

When these methodologies are integrated within an embodied perspective, a learning environment is created in which the body, action, emotion and storytelling all contribute to the construction of knowledge. Teaching activities thus become multisensory and participatory experiences, in which students can learn through doing, moving, collaborating and narrating (Skulmowski & Rey, 2018). This type of approach is particularly effective in supporting the participation of students with different learning styles and in reducing educational inequalities, fostering the development of cross-curricular skills such as collaboration, creativity and critical thinking (Redecker C., 2017; Voogt et al., 2013).

In educational contexts characterised by increasing complexity and diversity, it is therefore essential to design teaching interventions that integrate physical, cognitive and emotional dimensions, whilst promoting inclusion and participation. Within this framework, the present study aims to investigate the impact of an integrated educational intervention, based on embodied education, gamification and digital storytelling, on inclusive and participatory dynamics in a lower secondary school. The aim is to contribute to the development of transferable and sustainable teaching models capable of responding to the challenges of contemporary educational contexts and fostering a ‘common grammar’ for pedagogical innovation.

## 2. Aims of the research

In light of the theoretical framework outlined above, this study aims to systematically analyse the effectiveness of an integrated educational intervention—based on the interaction between embodied education, gamification and digital storytelling—in the context of lower secondary schools. The overall objective is to assess the extent to which these approaches, considered in a synergistic manner, can contribute to the creation of inclusive, participatory and cognitively meaningful learning environments, in line with contemporary perspectives that recognise the situated, bodily and emotional nature of learning processes (Shapiro & Stolz, 2019; Gomez Paloma et al., 2024).

In particular, a primary objective is to analyse the impact of the intervention on processes of inclusion and active student participation, viewing inclusion as a

multidimensional construct that integrates relational, emotional and cognitive dimensions (Ainscow, 2020; Florian, 2019). The aim is to ascertain whether the adoption of embodied practices, integrated with active teaching methodologies, is capable of reducing barriers to participation, increasing the accessibility of teaching activities and promoting forms of full and meaningful participation within the class group.

A second objective concerns the evaluation of the intervention's effectiveness on key psycho-educational variables, such as motivation to learn, engagement and perceived well-being. In line with recent literature, it is hypothesised that learning environments based on playful and narrative dynamics can activate forms of intrinsic motivation and support higher levels of cognitive and emotional engagement (Sailer & Homner, 2020; Immordino-Yang, 2015).

A further objective is to explore students' and teachers' perceptions of the teaching experience, in order to understand the processes through which the intervention brings about change. In particular, the aim is to investigate the role of the body, emotions and narration in the construction of meaning and the redefinition of classroom dynamics, in line with enactive and socio-constructivist approaches (Gallagher & Lindgren, 2015)

Finally, the research aims to identify teaching models, methodological tools and practices that can be transferred to educational contexts characterised by high complexity and diversity. In this sense, the study aims to contribute to the development of an evidence-based foundation for the design of inclusive and innovative learning environments, as well as to the construction of a 'common grammar' for the integration of embodied education and active teaching methodologies (Redecker, 2017; Voogt et al., 2013). From this perspective, the study aims to contribute to the identification of practices and methodological approaches that can be transferred to complex educational contexts, offering useful guidance for the design of inclusive environments capable of integrating bodily, relational, narrative and collaborative dimensions. In light of these objectives, the research is structured around the following hypotheses:

- H1: The integrated educational intervention (embodied education, gamification and digital storytelling) produces a significant increase in students' levels of participation and perceived inclusion compared to the pre-intervention phase (Ainscow, 2020; Florian, 2019).
- H2: The intervention leads to a significant improvement in motivation to learn, engagement and perceived well-being, particularly in terms of intrinsic motivation and emotional involvement (Sailer & Homner, 2020; Immordino-Yang, 2015).

- H3: Students and teachers attribute a positive role to embodied experience and active methodologies in fostering participation, collaboration and the shared construction of meaning (Gallagher & Lindgren, 2015).
- H4: The teaching model tested is transferable and adaptable to other complex educational contexts, contributing to the design of inclusive and innovative environments (Redecker, 2017).

### 3. Tools

This study adopted a mixed-methods approach, integrating quantitative and qualitative data in order to gain a comprehensive and multidimensional understanding of the phenomena under investigation. This approach is particularly well-suited to the study of complex educational contexts, as it allows for the integration of measurable dimensions and relational processes, offering a multi-level analysis of inclusive and participatory phenomena. This methodological choice addresses the need to capture both the measurable outcomes of the intervention and the meanings attributed by participants to the educational experience, in line with contemporary perspectives in educational research, which emphasise the value of data triangulation in complex contexts (Creswell & Plano Clark, 2007).

For the quantitative component, standardised instruments validated in the international literature were used, suitably adapted from a linguistic and semantic perspective to the context of lower secondary school. In particular, the Student Engagement Instrument (SEI), the Academic Self-Regulation Questionnaire (SRQ-A) and the Psychological Sense of School Membership (PSSM) were administered to assess, respectively, levels of school engagement, motivation to learn and perception of inclusion.

The instruments were administered as pre-tests and post-tests, at the start and end of the educational intervention respectively, to detect any changes in the variables under investigation. The instruments were administered by teachers from the participating classes, who had been trained beforehand by the research team, following standardised procedures designed to ensure consistency, reliability and the reduction of bias in data collection (Sailer & Homner, 2020).

Structurally, the questionnaires consist of items organised into 4- or 5-point Likert scales (ranging from 'not at all true' to 'very true'), appropriate to the students' age and designed to facilitate understanding and response.

Specifically, the Student Engagement Instrument (SEI) was used to assess school engagement in its cognitive and psychological components, considered central to meaningful learning processes. In particular, the instrument examines dimensions such as the value attributed to school learning, understood as the perception of the

usefulness and relevance of the content presented; the perceived support from teachers, relating to their availability, emotional support and the quality of the educational relationship; peer support, relating to collaboration and a sense of acceptance within the class group; as well as a sense of belonging to the school environment, which reflects the extent to which the student identifies with the school and feels an integral part of the educational community. These dimensions allow engagement to be understood not only as behavioural participation, but as a cognitive and emotional investment in learning processes (Fredricks et al., 2004).

The Academic Self-Regulation Questionnaire (SRQ-A) was used to analyse motivational processes according to the theoretical framework of Self-Determination Theory. The instrument allows for the distinction of various forms of motivational regulation along a continuum ranging from more controlled modes to more autonomous forms. In particular, the following were investigated: intrinsic motivation, linked to pleasure and interest in the activity itself; identified regulation, which reflects the importance attributed to study in relation to one's personal goals; introjected regulation, linked to internal dynamics of pressure, a sense of duty or a need for approval; and external regulation, driven by external factors such as rewards or sanctions. This framework allows for an in-depth understanding of the quality of students' motivation and the degree of self-determination in their learning behaviours (Ryan & Deci, 2004).

The Psychological Sense of School Membership (PSSM) was used to assess perceptions of inclusion and belonging within the school environment, fundamental dimensions in inclusive educational processes. In particular, the instrument examines the sense of social acceptance, i.e. the perception of being recognised and valued by peers; the perceived support from teachers, in terms of attention, listening and availability; recognition of one's role within the class, understood as the opportunity to participate actively and contribute to activities; and relational well-being, linked to the quality of interactions and the perceived emotional climate. These dimensions allow inclusion to be analysed not merely as physical presence, but as authentic and meaningful participation in school life (Goodenow, 1993; Allen et al., 2018).

For the qualitative component, semi-structured interviews were conducted with both students and teachers, with the aim of exploring the perceptions, experiences and meanings attributed to the educational intervention. The interviews were carried out at the end of the teaching programme and followed a flexible framework, organised into thematic areas consistent with the research objectives, so as to allow for an in-depth yet open exploration of the participants' experiences.

In the case of the students, the interviews investigated the level of engagement in

the proposed activities, with particular reference to embodied experiences and gamification dynamics, exploring the extent to which these methodologies encouraged active participation. The perception of inclusion within the class group was also examined in depth, considering the sense of belonging, the opportunity to express oneself and the quality of peer relationships. Specific attention was paid to the role of digital storytelling in learning processes, analysing how the narrative dimension contributed to the construction of meaning and the reworking of content. Finally, any difficulties encountered by students during the programme were identified, with a view to pinpointing critical issues and areas for improvement in the intervention.

Interviews with teachers, on the other hand, allowed us to explore the changes observed in classroom dynamics, with particular attention to levels of student participation, collaboration and inclusion. The perceived effectiveness of the methodologies adopted was also analysed, taking into account both didactic and relational aspects. Teachers were invited to reflect on the potential of the integrated approach used, as well as on any critical issues that emerged during the trial, thus offering a professional and reflective perspective on the processes set in motion.

The qualitative data collected were analysed using thematic analysis, following an inductive approach aimed at identifying recurring patterns and interpretative categories emerging from the data (Braun & Clarke, 2021). The analytical process was divided into several stages, which included familiarisation with the corpus of interviews, initial data coding, the construction and organisation of themes, as well as the subsequent review and definition of interpretative categories. This approach allowed for an in-depth understanding of the dynamics underlying the educational experience, integrating the quantitative results with a richer and more contextualised understanding of the processes of learning and inclusion.

#### **4. Sample selection**

The study was conducted at a lower secondary school in the city of Naples, involving pupils in Year 7, a stage considered particularly significant as it is characterised by processes of transition, adaptation and the redefinition of relational and learning dynamics. The total sample consisted of 110 pupils, spread across four Year 7 classes, selected from within the same school.

The sample was selected using purposive sampling, a choice consistent with the research objectives and the educational context in which the study was conducted. This approach made it possible to identify classes characterised by a comparable level of heterogeneity and to ensure the feasibility of the teaching intervention, whilst preserving the authenticity of the school context (Creswell & Plano Clark,

2007; Palinkas et al., 2015). In the educational field, in fact, the use of purposive samples is frequently adopted in quasi-experimental designs, as it allows research to be conducted in real-world contexts without altering the natural organisation of classes and whilst maintaining high ecological validity (Biesta, 2020).

The four classes involved were divided into two conditions: two classes formed the experimental group, participating in the innovative educational intervention based on the integration of embodied education, gamification and digital storytelling, whilst two classes formed the control group, continuing the teaching programme using traditional methods. This configuration allowed for the adoption of a quasi-experimental design with non-equivalent groups, which was useful for evaluating the effectiveness of the intervention by comparing different conditions, whilst maintaining the natural composition of the classes (Creswell & Plano Clark, 2007; Cohen et al., 2002).

Both groups included six students of foreign origin, ensuring representation of linguistic and cultural diversity and allowing for the observation of inclusive dynamics in heterogeneous contexts. The presence of students with a migrant background was considered a key factor in analysing processes of participation and inclusion, as the literature highlights that the linguistic factor represents a crucial dimension in processes of access, participation and educational success (Ianes & Cramerotti, 2013).

The criteria for inclusion in the sample required regular attendance at the relevant school and informed consent from the legal guardians of the students involved, in accordance with the ethical principles of educational research and international guidelines on research involving minors (Alderson & Morrow, 2020). These criteria were adopted to ensure the informed participation and protection of those involved, which are fundamental elements in educational contexts.

Students repeating a year were excluded in order to ensure greater homogeneity in terms of educational background and to reduce potential confounding variables linked to differences in experience and academic maturity (Cohen et al., 2002). Furthermore, students with special educational needs attributable to conditions other than linguistic disadvantage were excluded, in order to maintain a specific focus on a type of need consistent with the study's objectives.

Students with special educational needs falling within the category of linguistic disadvantage were included, however, as this condition represents a prime area for the analysis of inclusive processes and innovative teaching practices. The literature indeed highlights how active, multimodal and embodied teaching interventions can significantly promote the participation and learning of students with diverse linguistic backgrounds, thanks to the integration of different communication

channels and the enhancement of bodily and narrative experience (Cummins, 2021; Gomez Paloma et al., 2024).

The composition of the sample and the choice of a quasi-experimental design enabled us to analyse the impact of the intervention in a real-world context, characterised by complexity and diversity, thereby strengthening the ecological validity of the study and providing a meaningful framework for interpreting inclusive and participatory dynamics in the early years of lower secondary school. The decision to operate within a real school context, characterised by linguistic and cultural heterogeneity, also allowed us to observe inclusive processes in their ecological and situated dimension, highlighting the interaction between individual dynamics, the class group and the local context.

## 5. Activities

The educational programme ran over a period of 12 weeks, comprising a total of approximately 36 hours of teaching activities, spread across weekly sessions and firmly integrated into the timetable. The programme was designed within the Italian language curriculum and focused specifically on the construction of narrative text, with particular attention to the development of three fundamental dimensions: characterisation, the expression of emotions, and the management of narrative perspective. This approach is based on the central role of narration in the processes of meaning-making and the development of language skills, particularly in diverse and inclusive contexts (Rivoltella, 2020).

The programme was designed to promote active, situated and multimodal learning, emphasising the physical, emotional and relational dimensions of the educational experience. In particular, work on the narrative text was developed as a lived experience rather than merely a formal exercise, in line with embodied perspectives that emphasise the role of the body in the comprehension and production of meaning (Shapiro & Stolz, 2019; Gomez Paloma et al., 2024). The programme was structured into three main phases: activation, development and re-elaboration.

In the experimental group, the initial phase was dedicated to exploring characters and emotions through embodied activities. The students took part in role-play and dramatisations in which they were asked to 'play' characters, expressing emotions and moods through their bodies, voices and movement. This allowed for an experiential understanding of narrative elements such as characters' intentions, conflicts and transformations, fostering deeper and more meaningful learning (Gallagher & Lindgren, 2015; Skulmowski & Rey, 2018).

In the central phase, activities were organised according to gamification principles, structured as progressive narrative missions. The students, divided into small groups,

tackled tasks such as: creating a credible character (physical, psychological and emotional characteristics), developing a coherent plot and choosing the narrative perspective (first or third person). The activities involved increasing levels of difficulty, immediate feedback and symbolic reward systems (badges and points), which helped to sustain motivation and engagement (Sailer & Homner, 2020; Dichev & Dicheva, 2017).

At the same time, digital storytelling was introduced as a tool for creation and reworking. Students produced digital narratives centred on the stories they had constructed, using various formats (videos, multimedia presentations, podcasts), and integrating written text, images, sounds and performative elements. In particular, the autobiographical and intercultural dimensions were emphasised, allowing students, especially those from different linguistic backgrounds, to express personal experiences, emotions and viewpoints. This fostered the development of linguistic and narrative skills, as well as promoting processes of inclusion and mutual recognition (Robin, 2016).

The final phase included sessions for feedback and metacognitive reflection, during which students shared their work and discussed the narrative choices they had made, reflecting on the role of emotions, perspective and character development in storytelling. The activities were organised primarily on a cooperative basis, encouraging discussion, the negotiation of meanings and the shared construction of knowledge (Voogt et al., 2013).

The teacher's role in the experimental group was that of facilitator and mediator, aimed at guiding the learning processes and supporting the active participation of all students, with particular attention to those with language difficulties, for whom the multimodal approach represented an important factor in accessibility.

The control group, on the other hand, addressed the same subject matter (narrative text, character analysis, written production) using traditional teaching methods. The activities were based on lectures, guided reading and analysis of the textbook, and individual exercises in comprehension and written production. The construction of the narrative text was addressed mainly through theoretical explanations and written exercises, without the systematic integration of active methodologies, embodied practices or digital tools. This setup allowed for a basis of comparison useful for evaluating the effectiveness of the experimental intervention.

Overall, the intervention was designed to foster a deep understanding of narrative text through the integration of body, emotion and language, whilst promoting inclusion, participation and the development of communication skills, in line with the recommendations of the international literature on educational innovation in complex contexts (Redecker, 2017).

## 6. Results

### 6.1. Quantitative results

The analysis of the quantitative data was carried out by comparing the scores obtained by students in the experimental group and the control group in the pre-test and post-test assessments. The data were analysed using descriptive statistics (mean and standard deviation), a comparison of pre- and post-intervention scores, and a paired t-test to verify the significance of variations within each group. Furthermore, a comparison between independent groups was carried out at the pre-test stage, using an independent samples t-test, to verify the initial equivalence of the groups. The pre-test results do not show any statistically significant differences between the experimental group and the control group in any of the dimensions considered. In particular, similar values were found for engagement (experimental group:  $M = 2.91$ ,  $SD = 0.42$ ; control group:  $M = 2.88$ ,  $SD = 0.45$ ;  $t(108) = 0.37$ ,  $p = .712$ ), as well as for motivation ( $M = 2.76$ ,  $SD = 0.47$  vs  $M = 2.79$ ,  $SD = 0.44$ ;  $t(108) = -0.34$ ,  $p = .734$ ) and for perceived inclusion ( $M = 2.84$ ,  $SD = 0.40$  vs  $M = 2.86$ ,  $SD = 0.43$ ;  $t(108) = -0.26$ ,  $p = .796$ ). These results indicate substantial homogeneity between the groups at the initial stage, reinforcing the internal validity of the research design.

In the experimental group, the post-test results show a significant improvement across all dimensions investigated. The mean score for engagement rose from  $M = 2.91$  ( $SD = 0.42$ ) to  $M = 3.61$  ( $SD = 0.38$ ), representing a statistically significant increase of 24.1% ( $t(54) = 7.84$ ,  $p < .001$ ). Similarly, motivation to learn increased from  $M = 2.76$  ( $SD = 0.47$ ) to  $M = 3.49$  ( $SD = 0.41$ ), representing a 26.4% increase ( $t(54) = 8.12$ ,  $p < .001$ ). Perception of inclusion also shows a significant improvement, rising from  $M = 2.84$  ( $SD = 0.40$ ) to  $M = 3.58$  ( $SD = 0.36$ ), with an increase of 26.1% ( $t(54) = 8.67$ ,  $p < .001$ ).

In the control group, however, the improvements were more modest and not statistically significant. Engagement rose from  $M = 2.88$  ( $SD = 0.45$ ) to  $M = 3.05$  ( $SD = 0.43$ ), representing an increase of 5.9% ( $t(54) = 1.89$ ,  $p = .064$ ). Motivation increased from  $M = 2.79$  ( $SD = 0.44$ ) to  $M = 2.94$  ( $SD = 0.46$ ), representing a 5.4% increase ( $t(54) = 1.52$ ,  $p = .134$ ). The perception of inclusion increased from  $M = 2.86$  ( $SD = 0.43$ ) to  $M = 3.00$  ( $SD = 0.42$ ), representing an increase of 4.9% ( $t(54) = 1.41$ ,  $p = .162$ ).

A specific analysis was conducted on students with special educational needs (language disadvantage). Here too, the pre-test data show substantial equivalence between the groups. However, significant differences emerge in the post-test.

In the experimental group, students with SEN showed marked increases: engagement from  $M = 2.54$  to  $M = 3.42$  (+34.6%), motivation from  $M = 2.48$  to  $M$

= 3.37 (+35.9%), inclusion from  $M = 2.50$  to  $M = 3.45$  (+38.0%). In the control group, however, the increases were modest: engagement +7.4%, motivation +6.8%, inclusion +7.5%.

Overall, the quantitative results highlight how the integrated educational intervention produced significantly greater effects in the experimental group compared to the control group. The initial equivalence between the groups, observed in the pre-test, reinforces the interpretation of the results, suggesting that the improvements observed are attributable to the educational intervention. The impact on students with language barriers is particularly significant, for whom the embodied, gamified and narrative approach appears to have fostered greater participation, motivation and inclusion.

### 6.2. *Qualitative results*

The analysis of qualitative data was carried out through thematic analysis of semi-structured interviews with students in the experimental group, students in the control group, students with SEN due to a language disadvantage, and the teachers involved. The aim was to supplement the quantitative results with a more in-depth understanding of the perceptions, experiences and meanings attributed by the participants to the teaching programme. Four main dimensions emerged from the analysis: participation and engagement, inclusion and belonging to the class group, motivation and perceived efficacy, accessibility of activities, and the role of the teaching methodology.

With regard to the dimension of participation and engagement, students in the experimental group expressed a generally positive perception of the intervention, emphasising how embodied activities, gamification and digital storytelling made the programme more dynamic, practical and participatory. Many students highlighted the value of 'doing' and 'getting involved' in understanding the narrative text, particularly in character development and the expression of emotions: 'I enjoyed playing the character because it helped me understand better what they were feeling'; 'With the missions, it felt like playing a game, but we were actually learning'. In contrast, students in the control group described the learning experience in more traditional terms, referring mainly to reading, the teacher's explanations and written exercises: "We read the text and then answered the questions"; "It was a normal lesson, just like we usually have". This comparison highlights how the experimental group perceived a higher level of personal engagement and direct participation.

The second dimension that emerged concerns inclusion and a sense of belonging. Students in the experimental group reported feeling more involved in class work, particularly thanks to cooperative and narrative activities, which encouraged peer

interaction and the recognition of individual contributions: “Everyone had a role in the group”; “Even those who don’t speak much could contribute to the story”. Students in the control group, by contrast, described a more individual form of participation, centred mainly on the written task and interaction with the teacher: “Everyone did their own exercise”; “If I didn’t understand, I asked the teacher”. This difference appears particularly significant in relation to the study’s inclusive objectives, as it suggests that the experimental approach fostered a more distributed and collaborative form of participation.

Specific attention was paid to students with SEN attributable to a language disadvantage. In the experimental group, these students reported finding it easier to participate in the activities thanks to the combined use of body language, images, sounds, storytelling and group work. Their views highlight how multimodality made subject content more accessible and reduced the exclusive reliance on written language skills: “When we acted out the scene, I understood better even if I didn’t know all the words”; “With the images and the video, I was able to explain my idea”. In the control group, however, students with language difficulties reported greater difficulties in understanding texts and in individual written production: “Some words were difficult”; “Writing on my own was more complicated”. The comparison between the two groups suggests that the embodied and multimodal intervention acted as a significant facilitator for students with language needs, promoting greater access, participation and self-esteem.

The third dimension concerns motivation and perceived efficacy. Students in the experimental group associated the intervention with an increased interest in Italian and, in particular, in narrative writing. The presence of missions, badges, levels and final digital products was perceived as a motivating factor that helped clarify the purpose of the work undertaken: “We wanted to finish the mission”; “I felt more capable because I could see the result of our story”. In the control group, however, motivation appeared to be more closely linked to grades, the submission of the assignment and formal correctness: “We had to do the essay well”; “I was interested in getting a good mark”. This difference shows how, in the experimental group, motivation was more closely connected to the process, collaboration and the creation of a shared product.

Interviews with teachers confirm and expand upon what emerged from the students’ accounts. Teachers involved in the experimental group observed an increase in participation, particularly from students who are usually less active or have greater language difficulties: “Pupils who normally contribute little were more involved during group activities”; “The physical and narrative work also allowed students with language difficulties to contribute”. They also highlighted an

improvement in the classroom atmosphere, collaboration and willingness to listen to one another. However, some challenges were also noted, mainly linked to time management, the need for careful planning and the initial difficulty in organising cooperative and digital activities: “It takes a lot of time to prepare the activities”; “At the start, some groups needed stronger guidance”. Teachers in the control group, on the other hand, described a more predictable and orderly flow to lessons, but also less spontaneous student participation and greater difficulty in engaging pupils with language difficulties: “Lecture-style teaching allows for better control of time, but does not always engage everyone”; “Students with language difficulties tend to remain quieter”.

Overall, the thematic analysis highlights that the experimental intervention was perceived as more inclusive, motivating and accessible than traditional teaching. The dimensions that emerged — active participation, group belonging, motivation, multimodal accessibility and the role of teacher mediation — confirm the coherence between the embodied approach, the use of gamification and digital storytelling. In particular, the comparison between students with SEN in the two groups shows how the combination of body, narration and technology has helped to reduce language barriers and promote alternative modes of expression beyond written production alone.

## 7. Discussion

The findings of the study confirm the importance of an integrated teaching approach, based on a combination of embodied education, gamification and digital storytelling, for fostering more inclusive, participatory and motivating learning environments in lower secondary schools. The improvement observed in the experimental group, compared to the control group, highlights how the combined activation of the body, emotions, storytelling and technology can have a positive impact on learning processes and the relational dynamics of the class group.

In particular, the increase in engagement levels observed in the experimental group appears consistent with embodied perspectives, according to which learning is more meaningful when it involves the individual as a whole, integrating cognitive, bodily and emotional dimensions (Shapiro & Stolz, 2019; Gallagher & Lindgren, 2015). Role-playing, dramatisation and simulation activities enabled students to understand the narrative text not merely as a linguistic object, but as a lived experience, fostering greater internalisation of concepts related to character development, emotions and narrative perspective.

Data on motivation also confirm the positive role of gamification in supporting students’ active participation. The organisation of activities into missions, levels and

progressive feedback helped to make the learning journey more engaging, transforming the school task into a challenging and collaborative experience. This finding is consistent with studies highlighting how gamification can foster motivation, task persistence and emotional engagement, particularly when integrated in a way that is consistent with educational objectives (Sailer & Homner, 2020; Dichev & Dicheva, 2017).

A particularly significant finding concerns the improvement in the perception of inclusion and a sense of belonging at school. The experimental group showed more marked increases compared to the control group, suggesting that the integration of active methodologies and multimodal approaches can foster broader and more widespread participation. From this perspective, inclusion is not merely the presence of students within the classroom setting, but a concrete opportunity to contribute, express oneself and feel recognised within the educational community (Ainscow, 2020; Florian, 2019).

The qualitative findings reinforce this interpretation, showing that students in the experimental group perceived the activities as more accessible, dynamic and collaborative. The testimonies gathered highlight that cooperative work, digital storytelling and physical expression also encouraged the involvement of students who are generally less engaged. This finding appears particularly relevant for students with SEN attributable to linguistic disadvantage, for whom the combined use of body, images, sounds and storytelling facilitated access to content and communication. This outcome is consistent with the literature emphasising the value of multimodal and narrative approaches in multilingual and inclusive educational contexts (Cummins, 2021; Gomez Paloma et al., 2024).

Digital storytelling played a central role in fostering personal and collective re-elaboration of content. The production of digital narratives enabled students to integrate verbal language, images, sounds and performative elements, supporting both the development of language skills and the enhancement of diverse modes of expression. In this sense, digital storytelling has emerged as an inclusive tool, capable of promoting mutual recognition, the expression of identity and the shared construction of meaning (Robin, 2016; Rivoltella, 2021).

The role of the teacher also emerges as a decisive factor. In the experimental group, the teacher did not act primarily as a transmitter of content, but as a facilitator, mediator and director of the learning environment. This transformation of the teacher's role appears consistent with contemporary perspectives on educational innovation, which recognise the importance of designing flexible, collaborative environments geared towards active student participation (Redecker, 2017). The results also suggest that embodied, narrative and multimodal practices can

contribute not only to improving individual learning but also to transforming the relational and participatory dynamics of the entire classroom ecosystem. From this perspective, inclusion emerges as a systemic and distributed property of the educational context, constructed through the continuous interaction between individuals, practices, environments and teaching mediations.

Overall, the results confirm the research hypotheses. The intervention produced a significant increase in levels of participation and perceived inclusion, supported motivation and engagement, and fostered a positive perception of the experience among students and teachers. The convergence of quantitative and qualitative data reinforces the interpretation that the combination of embodied education, gamification and digital storytelling can constitute an effective teaching model for addressing the complexity of contemporary school contexts, promoting meaningful learning, participation and inclusion.

## 8. Conclusions

This study identifies a number of methodological considerations relevant to the design of inclusive teaching interventions in lower secondary schools. In particular, it highlights the importance of creating learning environments capable of integrating different languages, multiple modes of expression and forms of participation that are not based solely on verbal or written skills. This approach appears particularly significant in diverse school contexts, where the quality of the educational experience depends on the ability to reduce barriers to participation and to make the most of students' individual strengths (Ainscow, 2020).

However, the study has certain limitations that must be taken into account when interpreting the results. A first limitation concerns the nature of the sample, selected from a single school through non-probabilistic purposive sampling. Whilst consistent with the quasi-experimental design and the need to operate in a real-world context, this choice limits the generalisability of the results to other areas, schools or educational levels (Creswell & Plano Clark, 2007; Cohen et al., 2002). Furthermore, the distribution of students across classes was not randomised, a factor that may have introduced pre-existing differences between the experimental and control groups that could not be fully controlled for.

A further limitation concerns the duration of the intervention. The twelve-week trial allowed for the observation of short-term changes, but does not enable us to determine whether these effects are stable over time. It would therefore be necessary to conduct follow-up assessments, several months later, to verify the persistence of the observed improvements and their potential impact on standard learning practices. The presence of the teacher is also a variable to be considered:

their interpersonal style, familiarity with active methodologies and mediation skills may have influenced the effectiveness of the intervention, as is often the case in educational research conducted in natural settings (Biesta, 2020).

Another critical aspect concerns the data collection tools. Although standardised questionnaires and semi-structured interviews were used, the quantitative component relies on self-report measures, which are subject to the risk of social desirability and the subjectivity of students' perceptions. Similarly, the qualitative component provides a rich but situated interpretative framework, linked to the specific experiences of the participants. To further strengthen the validity of the data, future studies could incorporate systematic classroom observations, rubrics for assessing narrative work, and analysis of the digital products created by students (Braun & Clarke, 2021; Creswell & Plano Clark, 2007).

In terms of future implications, the research suggests the need to expand the experimental design to involve more schools, different geographical contexts and a larger number of classes. This would allow for the transferability of the model to be tested in school environments differing in socio-cultural composition, available resources and teaching organisation. It would also be useful to extend the intervention to other school levels and other subjects, in order to understand whether the integration of physicality, storytelling, play and technology can support meaningful learning even in different curricular areas, such as history, science, citizenship or foreign languages (Redecker, 2017).

Further developments could focus on teacher training. The effectiveness of interventions of this kind requires, in fact, planning, digital, inclusive and assessment skills, as well as the ability to manage cooperative and multimodal activities. From this perspective, future research could analyse the impact of teacher training programmes on the sustained adoption of embodied, gamified and narrative practices in mainstream teaching (Redecker, 2017; Rivoltella, 2021).

In conclusion, despite the limitations outlined, the study offers useful insights for rethinking instructional design in an inclusive and multimodal way. The perspective that has emerged invites us to consider innovation not merely as the introduction of techniques or tools, but as the intentional construction of environments capable of supporting participation, accessibility and the recognition of differences. From this perspective, the study's findings may offer useful guidance for defining future frameworks oriented towards Embodied Education, contributing to the identification of indicators relating to participation, accessibility, multimodality, collaboration and the quality of interactions in complex educational contexts.

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