GAMIFICATION AND INCLUSION: AN EDUCATIONAL APPROACH TO PROMOTE COLLABORATION AND EMPATHY IN A LANGUAGE HIGH SCHOOL

GAMIFICATION E INCLUSIONE: UN APPROCCIO DIDATTICO PER FAVORIRE LA COLLABORAZIONE E L'EMPATIA IN UNA SCUOLA SUPERIORE

Giovanna Scala
Università degli Studi della Campania Luigi Vanvitelli
scala.nina001@gmail.com

Giovanni Tafuri
Università degli Studi di Napoli Parthenope
giovanni.tafuri@uniparthenope.it

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ABSTRACT
The study investigates how gamification can foster school inclusion and improve prosocial skills in a secondary school. Using a qualitative-quantitative approach, the research is based on questionnaires to assess students' perceptions of inclusion and prosocial behaviour. The results show that gamification is an effective method to strengthen the sense of belonging and improve social relationships among students.

Lo studio analizza come la gamification possa favorire l'inclusione scolastica e migliorare le competenze prosociali in una scuola secondaria di secondo. Utilizzando un approccio quali-quantitativo, la ricerca si basa su questionari per valutare la percezione dell'inclusione e il comportamento prosociale degli studenti. I risultati mostrano che la gamification è un metodo efficace per rafforzare il senso di appartenenza e migliorare le relazioni sociali tra gli studenti.

KEYWORDS
Gamification, School Inclusion, Game Dynamics, Cultural Diversity, Social Interaction
Gamification, Inclusione Scolastica, Dinamiche Ludiche, Diversità Culturale, Interazione Sociale

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Introduction

School inclusion is a key objective of modern education systems and refers to a school's ability to welcome, value and support student diversity, ensuring equal opportunities for learning and participation (Booth & Ainscow, 2011; Florian, 2014). According to UNESCO (2017), inclusion is not only an ethical principle but also a key strategy for improving the academic performance and well-being of students by promoting an equitable learning environment that respects individual differences (Slee, 2018). In particular, the context of language high schools lends itself to experimenting with innovative strategies to support students' cultural and linguistic diversity (Cummins, 2009; García & Wei, 2014).

In recent years, gamification has emerged as an innovative teaching method capable of stimulating students' involvement and active participation through the use of typical game mechanisms applied in educational contexts (Deterding et al., 2011; Kapp, 2012). Recent studies have highlighted how gamification can foster intrinsic motivation (Deci & Ryan, 2000; Hanus & Fox, 2015), improve collaboration and promote a sense of belonging to a group (Domínguez et al., 2013; Sailer et al., 2017).

Furthermore, the use of playful dynamics in the classroom has been shown to have positive effects on emotion management and the development of social skills, which are fundamental aspects of an inclusive school environment (Kim, 2015; Sanmugam et al., 2019).

Integrating gamification into educational pathways has been shown to be particularly effective in supporting students with special educational needs, helping to reduce barriers to learning and promoting active participation strategies (Oberprieler et al., 2019; Su & Cheng, 2015). According to Zainuddin et al. (2020), gamification elements such as immediate feedback, progressive challenges and personalisation of the learning path can help create a more stimulating and accessible environment for all students. In the context of language schools, the use of gamification has also been shown to have a positive impact on language learning and interactions between students from different cultures, contributing to greater openness and inclusivity (Hsu et al., 2013; Muntean, 2011).

However, despite the growing interest in the application of gamification in education, its impact on the dynamics of inclusion and prosociality is still little explored (Buckley & Doyle, 2016; Seaborn & Fels, 2015). Some studies suggest that to be truly effective, gamification should be designed in an inclusive way, taking

into account the different needs of students and avoiding possible exclusionary effects related to excessive competitiveness (Nicholson, 2015; Werbach & Hunter, 2012).

In light of these considerations, the present study aims to answer the following research question: How can the gamified approach foster inclusion and prosociality in a language high school context? By means of an empirical analysis based on standardised tools for evaluating inclusion and prosociality, this research aims to provide concrete evidence on the effectiveness of gamification as a tool for enhancing students' participation, collaboration and sense of belonging within an inclusive school environment.

1. Methods

1.1 Aim of the research

The central aim of this research is to investigate the impact of gamification on school inclusion and the development of pro-social skills in a multicultural educational context. Specifically, the study aims to understand if and how the integration of playful elements in education can foster a sense of belonging, cooperation and interaction between students of different nationalities and cultural backgrounds. Particular attention will be paid to the ability of gamification to facilitate the integration process of German Erasmus students into the Italian school community, improving the quality of social relations and reducing possible linguistic and cultural barriers.

Through the comparison between an experimental group exposed to a gamified educational pathway and a control group which follows a traditional methodology, the research aims to collect quantitative and qualitative data to assess possible differences in perceptions of inclusion and pro-social behaviour.

1.2 Participants

The sample consisted of 100 students with an average age of 16 years, enrolled in a second language high school class at an institute in Naples. Among the participants, 20 students come from Germany and are participating in a two-year Erasmus programme in Italy. This international component further enriches the study context, making it possible to analyse the impact of gamification in an environment characterised by linguistic and cultural diversity.

To ensure a rigorous evaluation of the effectiveness of gamification, the sample was divided into two groups:

- Experimental group (50 students), who were subjected to a gamified course in which the lessons were enriched with game mechanics (points, levels, cooperative challenges, symbolic rewards).
- A control group (50 students), which followed the same teaching programme without the application of gamified elements, allowing a direct comparison between the two approaches.

The duration of the study was six months, with a weekly frequency of game-based activities, a period during which the dynamics of inclusion and prosociality were monitored through the initial and final administration of the Questionnaire for Detecting the Inclusive Quality of the School System as Perceived by Pupils and the Prosociality Scale for Adolescents and Adults. In addition, classroom observations were conducted to collect qualitative data on the interactions between students in the two groups.

Criteria for participation in the study include

1. Secondary school attendance to ensure homogeneity in age and educational background.
2. Belonging to two different cultures (Italian and German), in order to assess the influence of gamification on the dynamics of inclusion between students from different backgrounds.
3. Bilingualism: all participants speak at least two languages (English and German for Erasmus students; Italian and English for Italian students), which makes it possible to analyse if and how gamification can facilitate linguistic and cultural integration.

The heterogeneity of the sample, combined with the subdivision into control and experimental groups, makes it possible to obtain significant comparative data, making it possible to assess how the use of gamification can influence perceptions of school inclusion and the development of pro-social skills.

1.3 Data collection tools

To ensure an in-depth analysis of the impact of gamification on school inclusion and pupils' prosocial skills, the research used a combination of standardised instruments and qualitative methodologies.

Perceptions of school inclusion were measured through the Questionnaire for the Survey of the Inclusive Quality of the School System as Perceived by Pupils, a validated instrument to assess different aspects of inclusion, such as sense of acceptance within the class group, peer support and active participation in educational activities (Booth & Ainscow, 2011; Florian, 2014). Inclusion is a dynamic process that manifests itself not only in access to educational opportunities, but also in the quality of students' interactions and their sense of belonging (UNESCO, 2017). The use of this questionnaire allowed quantitative data to be collected on students' subjective perceptions of their school experience, providing a structured measure of inclusive dynamics in the classroom context.

In parallel, to assess prosocial skills, the Prosociality Scale for Adolescents and Adults was used, a widely used instrument to analyse dimensions such as cooperation, empathy and mutual help among students (Caprara et al., 2005). Prosociality is a key element in building inclusive environments, as it fosters positive relationships and cooperative attitudes, which are fundamental to the success of gamified teaching strategies (Eisenberg et al., 2015).

In addition to quantitative data, the study included a qualitative analysis based on classroom observations and semi-structured interviews with both students and teachers. The observation sessions conducted during gamified activities revealed spontaneous attitudes and behaviours, with a focus on the dynamics of peer interaction, active participation and inclusion of Erasmus students within the class group (Mertens, 2020). The interviews explored pupils' and teachers' perceptions of the impact of gamification on the degree of inclusion and participation in the proposed activities. In particular, the ability of gamification to promote participation, a sense of belonging to the group, and the potential for building positive relationships beyond the school context were addressed (Ryan & Deci, 2017; Zainuddin et al., 2020).

Qualitative data analysis was conducted using NVivo software, an advanced tool for processing and categorising textual information. The use of NVivo allowed for rigorous thematic analysis, identifying recurring patterns in the data from the observations and interviews. In particular, categories and subcategories were created based on the key concepts that emerged from the analysis, making it possible to identify the main relational and motivational dynamics associated with gamification. The software also facilitated the comparison of students' and teachers' perceptions, highlighting any interpretive divergences or convergences. Through the use of inductive and deductive coding techniques, it was possible to

integrate qualitative results with quantitative ones, offering a deeper insight into the role of gamification in school inclusion and the development of pro-social skills.

The combination of quantitative and qualitative tools, supported by NVivo analysis, allowed for a broader and more detailed view of the phenomenon under study. This approach made it possible not only to understand changes in students' perceptions and behaviour, but also to analyse the mechanisms through which gamification can foster inclusion and the strengthening of social skills, thus providing a solid empirical basis for future implementation of innovative teaching strategies.

1.4 Teaching intervention

The teaching intervention was divided into two separate tracks for the control and experimental groups, enabling the effectiveness of gamification in promoting school inclusion and the development of pro-social skills to be analysed.

In the control group, which consisted of 50 students, 10 of whom were German, the teaching took place through a traditional approach, based on lectures and conventional teaching activities. The learning units focused on the knowledge of Italian and German cultural traditions, supported by written texts, explanatory videos and guided discussions. Students worked individually or in small groups on worksheets with exercises in comprehension, written production and cultural comparison. Skills were assessed by means of written and oral tests aimed at verifying comprehension of the content and the ability to explain the characteristics of the traditions studied.

In the experimental group, which also consisted of 50 students, 10 of whom were German, a gamified approach was adopted, with the integration of playful elements and game dynamics into the teaching. The intervention was mainly based on role-playing activities designed to stimulate interaction between students of different nationalities and to strengthen prosocial skills (Zichermann & Cunningham, 2011). In particular, students were divided into mixed teams of Italians and Germans and involved in simulations of traditional events and celebrations of their respective cultures.

Each team had the task of organising and representing a typical Italian or German holiday, taking on specific roles (e.g. historical narrator, event organiser, culinary expert, cultural ambassador). Students had to research information, collaborate on multimedia materials and present their celebration through theatrical

performances or interactive storytelling. This methodology promoted experiential and situated learning, in line with Vygotsky's (1978) constructivist theories and socio-cultural perspectives on collaborative learning (Gee, 2007).

To incentivise engagement, reward mechanisms such as experience points, digital badges and progress levels were introduced, awarded based on participation, quality of presentations and ability to work as a team. The use of these dynamics has been shown to increase intrinsic motivation and persistence in the study (Deterding et al., 2011), also contributing to greater inclusion in the school (Hamari et al., 2014). In addition, gamification was used as a tool to promote a sense of belonging to the school community, as cooperative activities enhance a sense of self-efficacy and peer support (Ryan & Deci, 2000).

The educational intervention thus provided an opportunity to explore the impact of gamification not only on academic performance, but also on relational dynamics and students' predisposition towards collaboration and empathy (Kapp, 2012). In particular, the playful approach facilitated overcoming language and cultural barriers, improving social interaction skills and respect for differences (Nicholson, 2015).

2 Results

2.1 Quantitative Data Analysis

Analysis of the quantitative data made it possible to objectively assess the impact of gamification on students' school inclusion and prosocial skills, showing significant differences between the experimental and control groups. The scores obtained by the participants in the questionnaires administered before and after the educational intervention were compared to identify any changes in perceptions of inclusion and prosocial behaviour.

In particular, the data collected through the questionnaire for the Survey of the Inclusive Quality of the School System Perceived by Pupils (Booth & Ainscow, 2011) showed a significant increase in the sense of acceptance and participation within the class group among the students exposed to the gamified didactics. Students in the experimental group reported an increase in perceived peer support and greater involvement in school activities, with an average increase of 18.4% in perceived inclusion scores ($p < .05$). In contrast, in the control group, in which teaching was carried out using traditional methods, scores related to perceived inclusion remained almost unchanged (+2.1%), suggesting that the absence of playful

elements did not produce significant improvements in the sense of belonging to the school community.

Similarly, the Prosociality Scale for Adolescents and Adults (Caprara et al., 2005) showed a significant improvement in the dimensions of cooperation and empathy among students in the experimental group, with an average increase in prosocial behaviour scores of 22.7% ($p < .01$). Students involved in the gamified activities showed greater willingness to help each other, more active participation and more cooperative attitudes than their peers in the control group. In the control group, however, the changes in pro-social skills were minimal and not statistically significant (+3.4%), suggesting that the traditional teaching approach did not have a significant impact on the development of these skills.

A particularly relevant aspect that emerged from the analysis was the impact of gamification on Erasmus students: the German participants in the experimental group recorded a 20.5% improvement in perceptions of inclusion, whereas in the control group the increase was only 4.2%. This finding suggests that the use of game dynamics facilitated the process of cultural and linguistic integration to a greater extent, in line with previous studies on gamification in multicultural contexts (Zainuddin et al., 2020).

The comparison between the two groups clearly indicates that gamification played a key role in enhancing both school inclusion and prosocial dynamics. These findings are in line with previous research highlighting the potential of gamification to improve school engagement and the quality of social interactions (Hamari et al., 2014; Deterding et al., 2011). Furthermore, the use of playful mechanics appears to have had a positive impact on students' intrinsic motivation, in line with self-determination theory (Ryan & Deci, 2017), which highlights how a sense of competence, autonomy and social connectedness can be enhanced through play.

The quantitative analysis therefore confirms that the gamified approach not only encouraged participation and a sense of community, but also promoted more pronounced prosocial attitudes than traditional teaching. The combination of standardised tools and statistical tests provided robust empirical evidence to support the hypothesis that the use of gamification can be a valuable tool to improve not only learning motivation, but also the quality of interpersonal relationships and student well-being in inclusive school settings (Kapp, 2012; Nicholson, 2015; Ryan & Deci, 2017).

2.2 Qualitative Data Analysis

The qualitative analysis, conducted through classroom observations and semi-structured interviews with students and teachers, provided an in-depth perspective on the impact of gamification with respect to school inclusion and the development of pro-social skills. The comparison between the experimental group and the control group revealed significant differences in participants' perceptions and experiences, highlighting the key role of game dynamics in facilitating integration and cooperation between Italian and German students.

For the analysis of the qualitative data collected, the NVivo software was used, which made it possible to structure the analysis through a process of thematic coding, identifying the main categories that emerged from the data; in particular, it was possible to identify the recurring themes related to the perception of inclusion, active participation and collaborative dynamics among the students. The software allowed for a systematic analysis of the frequency and intensity of certain keywords, and provided a visual representation of the most relevant concepts through word clouds and concept maps.

Students' opinions

Students in the experimental group reported a stronger sense of inclusion than their peers in the control group. In particular, participants in the game-based activities described a more collaborative and dynamic environment, where active participation promoted mutual understanding and the overcoming of language and cultural barriers. Many Erasmus students stated that they felt more welcome thanks to the group activities, which encouraged dialogue and cooperation with their Italian peers. Some pointed out that the division into mixed teams and the assignment of specific roles facilitated the integration process, allowing them to express themselves without fear of being judged for any language difficulties. A German student said: 'At first I was afraid that my Italian was not good enough to interact with others, but the fact that I had to actively participate helped me to feel part of the group and to improve without fear of making mistakes.

The Italian students in the experimental group shared similar perceptions, emphasising that gamification made interaction with their Erasmus classmates more natural and less forced than traditional activities. One Italian student explained: "I immediately felt comfortable working with the German students. The game helped us to get to know each other without embarrassment and now I have friends to go out with after school'. This aspect was particularly important as many

participants reported that they continued to hang out with each other outside of school hours, consolidating the friendships formed during the game activities.

The NVivo analysis confirmed these trends, showing that terms such as cooperation, friendship, fun and trust recurred more frequently in the comments of pupils in the experimental group than those in the control group. The use of textual query functions made it possible to verify the correlation between the playful experience and the sense of belonging, showing how the language used by the students reflected a more positive perception of inclusion in the gamified context.

In contrast, students in the control group reported a more individualistic school experience, with fewer opportunities to interact with peers of different nationalities. Although some claimed to have developed a greater awareness of cultural differences through traditional teaching, most perceived a slower and less spontaneous integration than their peers involved in the gamified course. One boy in the control group commented: 'We studied a lot of German traditions, but I never really had the chance to interact with Erasmus students in a direct way. Talking to them during the break is different from having to work together for a common goal'. Furthermore, many pointed out that the relationships established between Italian and German students remained mainly limited to the school environment and did not translate into friendships outside the classroom.

Teachers' opinions

The teacher interviews revealed a significant impact of gamification in promoting integration between Italian and German students. According to the teachers, the Erasmus students in the experimental group showed greater confidence in interacting in Italian, thanks to the practical and engaging approach of the gamified activities. Indeed, the game created a less formal and more stimulating environment, reducing performance anxiety and encouraging active participation. One teacher commented: "I have seen children who were very shy at the beginning become more and more involved and confident. The fact that they had to work as a team and achieve goals made them feel part of a group without feeling judged.

Teachers also observed that the Italian students were more willing to help their foreign peers, encouraging them in their use of the language and assisting them with teaching challenges. As one teacher pointed out: 'The atmosphere created in the experimental group was really positive. The pupils started to support each other without constant intervention on our part. It was nice to see how inclusion happened spontaneously'.

The analysis with NVivo allowed a systematic comparison of the teachers' comments, highlighting how key words related to interaction (collaboration, integration, participation) were much more frequent in the statements of the teachers in the experimental group than in those of the control group. The cluster analysis functions also revealed a strong link between gamification and improved communication between students of different nationalities. In the control group, however, integration was slower and less effective. Teachers reported that the Erasmus students tended to interact more with each other and had more difficulty integrating into the classroom dynamics. Despite some inclusion strategies, such as splitting into small groups for class work, collaboration between students of different nationalities was less spontaneous than observed in the experimental group. One teacher explained: 'We tried to encourage group work, but often the Erasmus students stayed by themselves and the Italians did not take the initiative to actively include them'.

Another relevant aspect that emerged from the interviews concerns teachers' perceptions of inclusion and collaboration strategies. Teachers in the experimental group emphasised that role-playing activities and cooperative challenges fostered greater peer interaction, promoted a sense of belonging and built stronger social bonds. One teacher noted: 'Being able to play different roles and create something together made it more fun and engaging. Working together was no longer an imposed task but an enthusiastic experience'.

In contrast, teachers in the control group highlighted the need for more structured interventions to facilitate integration, as the traditional teaching approach was not as effective in stimulating spontaneous collaboration between pupils. One teacher was critical: 'Without tools that actively encourage collaboration, it is difficult for students of different nationalities to interact in depth. They often limit themselves to superficial knowledge.

3. Discussion

The results of this research confirm the effectiveness of gamification in promoting school inclusion and the development of pro-social skills in multicultural educational contexts. The comparison between the experimental group and the control group showed that the integration of playful elements in education significantly strengthened the sense of belonging to the school community, promoted cooperation between students of different nationalities and reduced language and cultural barriers. These data are in line with previous studies

highlighting the potential of gamification to increase motivation, active participation and the quality of social interactions (Deterding et al., 2011; Hamari et al., 2014; Kapp, 2012).

A particularly significant aspect that emerged from the quantitative analysis concerns the 20.5% increase in the perception of inclusion among Erasmus students in the experimental group, compared to a more modest increase (4.2%) in the control group. This suggests that gamification not only stimulates participation, but also plays a key role in the process of cultural integration. According to Zainuddin et al. (2020), playful dynamics enable students to learn in a collaborative and engaging way, reducing the anxiety associated with interacting in a foreign language and fostering more authentic peer relationships. These findings are further supported by Vygotsky's (1978) socio-cultural theory, which highlights the crucial role of social interaction in learning and cognitive development.

The qualitative analysis reinforced these data, showing that students in the experimental group perceived the game-based activities as an opportunity to interact spontaneously and meaningfully with peers of different nationalities. The interviews revealed that many Erasmus students who were initially reluctant to use the Italian language became more confident in actively participating in role-playing and cooperative challenges. This finding is consistent with Ryan and Deci's (2000, 2017) theories that learning is most effective when students perceive high levels of autonomy, competence and connection with others, elements that gamification can enhance.

Teachers also recognised the effectiveness of the gamified approach in promoting cooperation and inclusion. They emphasised how the game created a more relaxed and participatory environment, fostering pro-social attitudes among Italian students. In particular, they observed a greater willingness to help their Erasmus peers, supporting them in language use and educational activities. This finding confirms Nicholson's (2015) assertions that a well-structured game design can strengthen the sense of community and mutual support, which are fundamental elements for effective integration.

In contrast, integration in the control group was slower and less spontaneous. Relationships between Italian and German pupils remained mainly confined to the school context, without developing into deeper interactions. This finding is in line with the literature highlighting the limitations of traditional teaching methods: although effective for formal learning, they are often less engaging and less suited to fostering authentic interaction between students from different backgrounds (Gee, 2007; Mertens, 2020). Teachers in the control group emphasised the need for

more structured strategies to foster inclusion, confirming findings from previous research on the importance of active and collaborative teaching approaches for engaging students in multicultural contexts (Florian, 2014; UNESCO, 2017).

In summary, this research provides empirical evidence to support the use of gamification as an effective tool to foster school inclusion and pro-social skills in multicultural classrooms. The findings suggest that the integration of playful elements into the classroom not only increases motivation and engagement, but also facilitates the building of deeper and more meaningful relationships between students of different nationalities, contributing to a more inclusive and collaborative school environment.

Conclusions

The results of this study confirm the value of gamification as an effective tool to promote school inclusion and the development of pro-social skills in multicultural educational environments. The comparison between the experimental group and the control group showed that the integration of playful elements in education significantly strengthened the sense of belonging to the school community, stimulated cooperation between students of different nationalities and reduced language and cultural barriers. These findings are in line with previous studies that highlight the role of gamification in enhancing students' intrinsic motivation and active participation, which are essential elements for effective and inclusive learning (Deterding et al., 2011; Hamari et al., 2014; Kapp, 2012). Furthermore, playful dynamics have been shown to be particularly effective in promoting spontaneous and meaningful interactions between students from different cultural backgrounds. In sum, this research provides empirical evidence supporting the use of gamification as an innovative tool to improve school inclusion and pro-social skills in multicultural classrooms. The introduction of playful elements in education not only increases student motivation and engagement, but also promotes more spontaneous and meaningful peer interaction, contributing to the creation of a more collaborative and welcoming school environment. In light of these findings, future research could further investigate the impact of gamification on other aspects of school integration, such as students' academic performance and emotional well-being, in order to broaden our understanding of the potential of this pedagogical approach (Ryan & Deci, 2017; Zainuddin et al., 2020).

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