

Of course it is extrinsic motivation! Classcraft in Italian secondary school

Certo che è motivazione estrinseca! Classcraft nella scuola secondaria italiana

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Abstract

This study explores the integration of Classcraft, a gamified learning platform, in educational settings and its impact on students' engagement and motivation, as a possible way to prevent school dropout. Utilizing a qualitative multiple case study approach, the research examines the introduction of Classcraft in one high school and ten middle school classrooms. Data were collected through surveys, interviews, research diaries and focus groups, revealing that Classcraft fosters various types of engagement. This study relates these different types of engagement to extrinsic motivation in the light of the results and comparison with the literature. The results provide key insights into gamification effectiveness in educational contexts and highlight the need for further research on teacher's role on students' motivation during gamified system usage.

Keywords: gamification; game-based learning; motivation; engagement; dropout.

Sintesi

Questo studio esplora l'integrazione di Classcraft, una piattaforma di apprendimento gamificata, in contesti educativi e il suo impatto sul coinvolgimento e sulla motivazione degli studenti, come possibilità per prevenire l'abbandono scolastico. Attraverso un approccio qualitativo di studio di caso multiplo, la ricerca esamina l'introduzione di Classcraft in una scuola superiore e in dieci classi di scuola media. I dati sono stati raccolti attraverso questionari, interviste, diari degli insegnanti e focus group, rivelando che Classcraft favorisce diversi tipi di coinvolgimento. Questo studio mette in relazione questi diversi tipi di impegno con la motivazione estrinseca, alla luce dei risultati e del confronto con la letteratura. I risultati forniscono indicazioni fondamentali sull'efficacia della gamification nei contesti educativi ed evidenziano la necessità di ulteriori ricerche sul ruolo dell'insegnante sulla motivazione degli studenti durante l'utilizzo di un sistema gamificato.

Parole chiave: gamification; game-based learning; motivazione; coinvolgimento; abbandono scolastico.

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1. Introduction

The integration of games into educational environments gained significant momentum in recent years, primarily due to the recognition of their capacity to enhance student engagement and improve learning outcomes. This trend is often framed within the concepts of gamification and game-based learning (GBL). Gamification, first coined in the digital media economic sector in 2008 (Deterding et al., 2011), refers to the application of game mechanics to non-game contexts to boost user engagement. Since then, gamification has been applied across various domains, including social networks, marketing, health and education. In contrast, GBL denotes environments that provide opportunities for the acquisition of knowledge and skills through the utilisation of game content and mechanics (Ishak et al., 2021). Through GBL, learners engage in problem-solving activities and challenges that foster a sense of accomplishment (Jan & Gaydos, 2016).

In educational settings, gamification initiatives utilize game-like elements (e.g., points, badges and leaderboards) to foster user engagement and motivation. However, these initiatives often encounter substantial challenges that can undermine their success. For instance, over-reliance on extrinsic motivators like rewards can diminish intrinsic motivation and long-term engagement (Deci & Ryan, 2014). A critical issue in gamification is the lack of a meaningful purpose; without clear objectives, experiences can seem irrelevant, leading to reduced engagement (Morschheuser et al., 2017). This reliance on quantifiable outcomes can limit the breadth of its impact, particularly on intrinsic motivation and deeper learning experiences. As Passarelli and colleagues (2019) have observed, the incorporation of games into educational settings may have the unintended consequence of diminishing their intrinsic motivational capacity, given that such incorporation tends to conflict with the natural spontaneity and recreational nature of play.

The evolution of gamification has shifted from simplistic reward-based models to fostering intrinsic motivation through dynamic and engaging mechanics (Becker, 2017). The rise of digital technologies has further enabled sophisticated gamified systems that cater to diverse learning styles and preferences. Nevertheless, while most studies report positive results from gamification, qualitative findings often reveal mixed outcomes, thereby underscoring the complexity of its application in education (Majuri et al., 2018). Despite advancements in gamification, challenges persist in effectively integrating games into educational frameworks. A notable issue is the tendency for many gamified systems to adopt a “one size fits all” approach, which inadequately addresses the diverse needs and motivations of individual learners (Santos et al., 2021).

Despite the challenges outlined, well-designed gamification strategies have shown promise in reducing dropout rates and increasing student motivation, especially in online and higher education settings. Several studies have explored the use of gamification elements such as badges, leaderboards, rewards and challenges such as in MOOCs and university courses (Zakaria et al., 2024; Lara-Cabrera et al., 2023). These elements have been found to positively impact student engagement, motivation and completion rates in various contexts, including STEM education and mathematical courses (Lara-Cabrera et al., 2023). However, gamification does not work through digital alone. Innovative and personalized approaches that use game elements in other activities (cooking, drama, music) can help create an educational environment that not only catches students up academically, but also helps them grow personally and socially, reducing the risk of dropping out of school (Fant, 2018).

This paper aims to critically analyse these challenges through a multiple case study focusing on Classcraft, an under-researched gamified system in Italy (which uses a digital

platform, but is physically fulfilled in the classroom), demonstrating its effectiveness in enhancing student motivation and engagement while addressing inherent challenges faced in gamified learning environments.

The objectives include:

- identifying essential elements of the Classcraft experience, such as “fun”, “social dynamics” and the “feedback system”;
- recognizing the different types of student engagement that emerged during the Classcraft experimentation;
- critically relating the different types of engagement to the type of motivation to which they correspond, in the light of the findings and literature.

By addressing these objectives, this study seeks to provide valuable insights into the role of gamification in education.

2. Literature review

Game-based learning encompasses various educational theories explaining how people learn through play (Becker, 2017). Foundational theories by Dewey and Vygotsky emphasize that knowledge is deeply tied to its social context, forming a core premise in understanding learning through play (Walz & Deterding, 2014). These theories underline the collaborative and contextual nature of learning, which games can effectively simulate through their interactive and immersive environments. For example, situated learning posits that thought formation arises through experiences involving objects, interactions, individuals and cultural tools such as language and concepts (Brown et al., 1989; Salen, 2008). Similarly, co-constructed learning emphasizes that understanding develops externally through social interaction before being internalized (Walz & Deterding, 2014).

Behaviourist theories, closely linked to extrinsic motivation, highlight systems of rewards and punishments, exemplified by Skinner’s classical conditioning (Becker, 2017). However, this approach faces criticism for oversimplifying gamification as a ‘sweetened’ reward-punishment mechanism. In contrast, humanist theories focus on self-actualization and intrinsic motivation, where activities are pursued for inherent pleasure (Sun & Hsieh, 2018). Csíkszentmihályi (1990) frames this as living in the present, free from the constraints of hypothetical future gains. Research shows that virtual goods in gamified systems reflect intrinsic motivation, moderately correlating with concentration and autotelic experiences (Mustafa, 2018). These findings suggest that while external rewards may provide initial engagement, long-term motivation is more sustainably driven by intrinsic factors.

Self-determination theory (SDT) identifies three key human needs driving motivation: competence (demonstrable skill), autonomy (decision-making freedom) and relatedness (connection with others) (Ryan & Deci, 2000). The concept of “flow” (Csíkszentmihályi, 1990), associated with well-being and intrinsic motivation, is often misunderstood by students with fun (Purgina et al., 2020). Flow is characterized by deep engagement and a sense of mastery, which gamification can facilitate through well-designed challenges and feedback systems. However, achieving flow requires careful calibration of tasks to individual skill levels, emphasizing the importance of personalized gamified experiences.

Gamification involves incorporating game elements into non-game contexts to leverage games’ motivational benefits (Deterding et al., 2011; Hamari, 2019). Initially criticized for

its overreach into various domains (Walz & Deterding, 2014), gamification has since gained academic acceptance, particularly in education and game design. Passarelli and colleagues (2019) highlight concerns that using games for educational purposes can undermine their intrinsic motivating potential by contrasting with the spontaneous and recreational character of play. Both players and educators agree that gaming should not be presented as a mandatory activity in schools, as this risks alienating students and stripping the activity of its inherent fun. Additionally, individual differences in game preferences and motivations, including gender, further complicate the application of gamification in educational contexts. These insights align with SDT's emphasis on autonomy, underscoring the need for voluntary participation to sustain motivation. Gamified systems are often classified by their game elements, which derive from Caillois' (1981) energies. Toda et al. (2019a; 2019b) validated a taxonomy of 21 educational game elements grouped into five designs, emphasizing the value of assessing combined elements over individual ones. Majuri and colleagues (2018) observe that gamification in education predominantly relies on achievement and progression-oriented affordances, such as points, badges and leaderboards, with less frequent use of social and immersion-oriented affordances. While most studies report positive outcomes, such as improved grades and task completion speed, qualitative findings often indicate mixed results. These inconsistencies highlight the need for balanced approaches that integrate social and immersive elements alongside achievement-based mechanisms.

Current research focuses on aligning gamification designs with user profiles, as personalized systems tend to be more effective (Tondello et al., 2019). Personalization addresses individual differences in game preferences and motivational drivers, as noted by Passarelli and colleagues (2019), who emphasize the role of gender and other demographic factors in shaping engagement. While studies in school settings report mixed results (Çakıroğlu & Güler, 2021; Daghestani et al., 2020; Dumas Reyssier et al., 2023), discrepancies may stem from:

- the inherent openness of educational contexts to risk (Rossoni & Riva, 2022);
- the prevalence of “one-size-fits-all” systems (Santos et al., 2021);
- the instability of user profiles, complicating consistent matches with gamification designs (Santos et al., 2023).

This study explores these debates using Classcraft, an under-researched gamified system in Italy. Since Classcraft aims to increase student's engagement (Hamari, 2019), and we know from Masek and Stenros (2021) that it's possible to identify different types of engagement, we explore our results with this focus. Moreover, aligning with McGonigal's (2011) assertion that self-fulfilment outweighs external rewards, to become what one can become (Bertolo & Mariani, 2020), we move forward to examine if the introduction of Classcraft contribute to intrinsic motivation towards the disciplines involved.

3. Methodology

Following the model of other research designs (Çakıroğlu & Güler, 2021), the data collection and analysis process comprised both a qualitative and a quantitative component. The latter is a complementary analysis conducted within the same project but with different objectives, which has been zoomed elsewhere (Brambilla et al., 2024a). In this article, it has been decided to present the part of the qualitative research that constitutes the bulk of the data collected, specifically related to the objectives previously presented. The research

strategy is the case study, that is, an empirical investigation that studies a contemporary phenomenon in its real context (Stake, 1994; Yin, 2005). In particular, the strategy can be defined as a “multiple case study” (Corcoran et al., 2004). In fact, the object of study is the implementation of Classcraft in one high-school and ten middle-school classrooms. By studying multiple cases in different contexts, it is possible to formulate a theory that provides criteria for interpretation in similar cases due to a certain predictive ability, so-called “fuzzy generalization” (Hammersley, 2001).

3.1. Data collection

	t0<x<t1		t1			
Case study	Interviews to informants	Research diary	Participants' final form	Post-test Questionnaire	Focus group	2nd Year Data
MS1	Yes	Yes	Yes	Yes	Yes	Yes
IN1	Yes	Yes	Yes	Yes	Yes	Yes
MS2	Yes	Yes	Yes	Yes	Yes	No
IT1	Yes	Yes	Yes	Yes	Yes	No
LE1	No	No	No	No	No	No
LE2	No	No	No	No	No	No
IT2	No	Yes	Yes	Yes	No	No
MS3	Yes	Yes	Yes	Yes	Yes	Yes
LE4	Yes	Yes	Yes	Yes	Yes	No
MI1	Yes	Yes	Yes	Yes	Yes	No

Figure 1. Graph of tools to collect data for each case study.

As the case study can be traced back to inductive epistemology, it allows an opening to different data collection tools by repeating data collection on the same individuals (Meyer, 2001). In this way, it permits to embrace different contributions (students, co-researcher teachers, parents) within the same case study, carrying out a triangulation between collection techniques (Moggi, 2016) and confirming their validity (Patton, 2002). The data collection tools were defined from the triangulation with university colleagues and stakeholders, participating teachers and Dalmine Foundation. Here's a list of the ones used for qualitative data collection:

- post-test surveys for students, whose items are based on those of Mustafa (2018) and Watson (2018), which explored students' perceptions of progress in the disciplines involved, engagement, inclusion and flow;
- the interviews which guarantee a different space of expression for some pupils who are considered more indicative than others, so-called “informants” (Patton, 2002), before the end of the Classcraft experience, through questions that would not have been asked in the post-test, relating to grades, engagement, inclusion and flow;
- the research diaries, to deepen Classcraft experience from the teachers' point of view, as observers, participants and co-researchers, though specific events, descriptions, arguments, hypotheses, theories and annotations resulting from direct and prolonged observation of the phenomenon (Mortari & Ghirotto, 2019);
- the final surveys, which give the co-researchers the opportunity to assess their overall view of the Classcraft experience, with targeted questions to fill in any gaps and draw some conclusions;

- the two focus groups, one face-to-face and the other later at a distance, which allowed to co-construct meaning with the teachers involved around topics of interest such as “fun”, “social dynamics” and “feedback system”;
- the second year’s instruments, which included the continuation of the compilation of the research journal and another final survey, administered to further exploration of time and other issues arising².

3.2. Sample

The sample is non-probabilistic but voluntary (Viganò, 2002). The choice was made because Classcraft is not widespread in Italy and because of the lack of a well-defined network of users. The channels used to sample the teachers were the Classcraft headquarter in Canada (which did not provide Italian contacts), personal acquaintances, the Dalmine Foundation’s network and the Classcraft Italia Facebook group. The aim of expanding the sample from case study 0, i.e. the middle school class in which the main researcher taught during the 2021-22 school year, was to reach a significant number of classes so that they could be followed properly in terms of initial training, handling bureaucracy with schools and data collection (Figure 2).

Case	CS0	IN1	IT1	IT2	LE1	LE4	MI1	MS1	MS2	MS3
Year	3 rd middle school	2 nd middle school	3 rd middle school	2 nd middle school	3 rd middle school	1 st middle school	4 th high school	2 nd middle school	1 st middle school	1 st middle school
Students	9 F, 17 M	9 F, 15 M	10 F, 7 M	13 F, 7 M	5 F, 9 M	9 F, 6 M	7 F, 14 M	9 F, 17 M	9 F, 6 M	12 F, 11 M
Subjects	Huma- nities	English	Italian	Italian	Huma- nities	Huma- nities	Maths	Maths and Science	Maths and Science	Maths and Science
Hours per week	12	3	6	6	14	5	5	7	6	6
Region	Lombar- dy	Lombar- dy	Lombar- dy	Apulia	Lombar- dy	Campa- nia	Lombar- dy	Lombar- dy	Lombar- dy	Pied- mont

Figure 2. Table with some contextual data about the sample.

This was done by balancing the characteristics of the co-researching teachers in terms of both gender and age: 6 women and 4 men made up the group who experimented with Classcraft for between 2 and 4.5 months during the school year 2022-23. Only one never started; in addition, 3 of them continued the experiment in the 2023-24 school year. 7 of them served in Lombardy, including 3 in private institutions, one in Piedmont, one in Campania and one in Apulia. Their previous years of service ranged from 4 to 22, data that can help us qualify the non-probability sample. Among them there were 5 Humanities teachers, 3 Mathematics and Science teachers, one Mathematics and Computer Science teacher and one English teacher. The total number of students involved was 92 females and 114 males, 3 classrooms for each grade level in the middle school and a high school senior class, chosen for the peculiar context: a vocational institute, with a grading system by

² For further information about tool of data collection in this project, see Brambilla et al. (2023) and Brambilla (2023).

levels.

3.3. Data analysis

The analysis required an initial familiarization phase and a recursive process of reading the data, which are constitutive of thematic analysis (Braun & Clarke, 2006). The recordings (of interviews and focus groups) were transcribed using Microsoft Word and Google Colab. The main author of this article was responsible for the coding and involved all the tools mentioned above. Each segment (Boyatzis, 1998) was given an alphanumeric code. In a process of triangulation and peer review with colleagues, who included the third author of this article, the semantic comparison between the segments resulted in themes and sub-themes, which then underwent substantial changes during the revision of the entire framework. Finally, each theme was given its final name and its own written description in a codebook.

4. Results

In the thematic analysis, 2650 segments were identified and grouped into 6 main themes, which were divided into sub-themes (Figure 1).

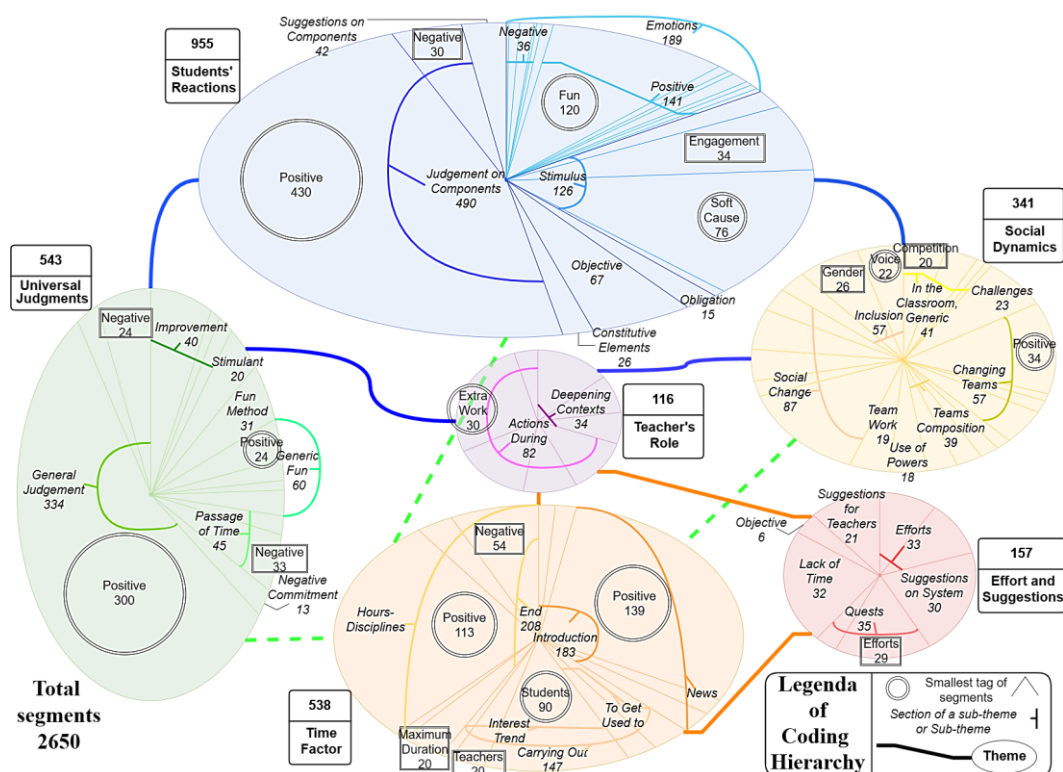


Figure 3. Graph of themes and sub-themes resulting from thematic analysis.

To answer the research question, we selected few strands that emerged clearly: the concept of “fun” and the system of rewards and punishments present in Classcraft. “Fun” stands out with 63.5% of the identified segments for the sub-theme Emotions (189 total).

Classcraft is also generically recognized as an aggregating gamified system and facilitator of fun in the classroom (14 segments), within competitive Social Dynamics, just as it is cross-recognized by students and teachers as fun among Universal Judgments. Social interactions are often related to fun. More positive social changes occurred than negative ones, by a ratio of 2.5 to 1, both among peers and with the teacher; moreover, this seems to be the aspect that most easily survives the use of Classcraft. In the same vein, random events (occasional and unknown happenings that generate unexpected situations and challenges within the class) and teams (groups formed to work together among peers) were the two students' favourite components. Random events are the component with the highest number of occurrences (244), as well as the highest number of emotions (56.7%), mostly positive, among which the concept of "fun" stands out; they also account for 17.6% of the results of the tag "engagement". In second place, with 237 occurrences, is teams, with a very high level of agreement, due to the internal interdependencies created during group activities, especially when team members share "the magic and the beauty of the game" (CS0-046a, post-test, female student). The term "collaboration" clearly outperformed "competition" on this component, allowing us to infer that Classcraft, as used, provides more opportunities for collaboration than for competition. Furthermore, feeling part of something and having fun are closely related, and encouraged by this gamified system.

Classcraft has two types of rewards: (i) experience points, which contribute to levelling up and thus unlocking powers and (ii) gold pieces, which are used to modify one's avatar. For alumni, both XP and gold pieces are the most essential components for the dynamics of the game system, appearing at the top of the occurrences of the sub-theme Constitutive Elements with 8 (31%) and 6 (23%) segments, respectively. Likewise, levels and XP hold the primacy (47.8%) of the sub-theme Objective, while gold pieces and avatars, also to be considered together, follow with 25.4%. Within the sub-theme Engagement, all case studies that used Classcraft for at least two months are included. It should be noted that one of the informant-interview questions explicitly mentioned this concept, so 14 of the 34 results come from the interviews themselves (41%). However, this is still indicative of a cross-sectional spread of engagement. In this case, gold pieces and avatars are the most common (38% combined). There are then 6 segments regarding the reinforcement of gold pieces within the sub-theme Negative Judgment Component, sometimes appointed as an unnecessary mechanism. Regarding the theme Teacher's Role, it happened that they did not provide for the bestowal of gold pieces, thus preventing their students from experiencing the avatar modifications that each student could implement individually at home.

Punishments in Classcraft are represented by the loss of hearts and pledges (a bad consequence to be resolved when dying in the game, which is randomly drawn from a list). Losing hearts contributes to the risk of being assigned a pledge. In the two classes (CS0 and IT1) where this system of punishments was used the most (as opposed to the other cases where it was completely overshadowed by rewards), they were perceived as more "obligatory" (8 out of 15 in the sub-theme Obligation), mostly coming from interviews. It seems that if a component is perceived too much as an obligation, it is felt as negative, so much that there is talk in some cases of a willingness to give up the game. In the sub-theme Negative Judgment Component, the set of punishments reaches 18.3%, somewhat echoing what was mentioned earlier. Then we note the 13 segments out of 60 in IT1 (21.7%), indicating a particularly difficult situation, in which even components that worked elsewhere were exceptions here. This allows us to state that the use of punishment in a particularly difficult pre-trial context, such as IT1, should be discouraged as it tends to have the opposite effect on pupils' engagement in the long run.

Considering rewards and punishments together, points (with 44.7% of occurrences) and losing hearts (with 26%) are the most influential components for the sub-theme Stimulus. Both can therefore have a positive effect on students, “because without punishments and rewards the game ain’t meaning” (MIS-113, post-test, male student), with positive reinforcement outweighing punishment. It is also interesting to note that the high-school case study, MI1, makes a significant contribution of more than 26% (20 out of 76), in one of Stimulus tag. These data suggest that the feedback system as used by the teacher in the MI1 case modality in high schools can have a significant impact on students’ specific kind of engagement related to gold pieces and avatar: “For mine was the purpose of the game [...] to customise, because yes, they are probably a bit older and see that aspect” (MI1-170, focus group, male teacher).

5. Discussion

According to definitions of gamification (Deterding et al., 2011; Hamari, 2019), it aims to contribute to the engagement of students at school and Classcraft is a gamified system that meets the optimal conditions of gamification in the educational context (Zhang et al., 2021). It is confirmed by the results in a cross-sectional way; but different types of engagement emerge. The question then arises: -What type of engagement does Classcraft contribute to?

5.1. Different types of engagement

Within the above system of rewards and punishments, cross-referencing the sub-themes in which gold pieces appear, there are very few references to the temporal sphere (none to duration) and few to sociality. This allows us to attribute them to a personal, extra-temporal type of engagement, which some respondents, those who did not participate in this playful way, considered unnecessary. This is a very interesting finding, more so if we consider the results of the literature, which recognizes in dealing with gold pieces a voluntary and intrinsically motivated adherence to the game, without any real practical implications or benefits (Mustafa, 2018). It is possible, then, to hypothesize that the students’ use of the term “fun” as a matter of lexical poverty on the part of the respondents may imply, among its meanings, a sense of participation. Thus, even when we referred to fun in general, we could also refer to that sense of vertigo or ilinx (Brambilla et al., 2023; Caillois, 1981) that comes from empowerment. Moreover, random events are liked because they are moments experienced together as a class, generating another kind of engagement that Sanchez and colleagues (2017) call “social”. The statistics presented on the sub-theme of Engagement, with the most frequent occurrences, suggest the existence of two different levels of engagement: one that is more related to the relationships in the class (represented by random events), which also appears elsewhere in other sub-themes; and one that is more domestic, personal, pleonastic, playful (represented by gold pieces and avatars). In parallel, the sub-theme Objective confirms the juxtaposition of two other different types of engagement, represented by XP that contributes to level up and the combination of gold pieces and avatars.

Here it is necessary to make a synthesis of the different souls of engagement that emerged during the qualitative analysis. It is possible to distinguish (i) a gameful one, generated by XP and punishments; (ii) a more solipsistic, playful one, stemming from the use of gold pieces and the avatar; finally, (iii) a more social, competitive one.

5.2. Comparison with literature

It is also possible to highlight some points of contact between the components of Classcraft and Masek and Stenros' (2021) different types of engagement: (i) "focused" is reminiscent of the point-allocation-and-punishment system, thinking about the sub-themes of Objective and Constitutive Elements; (ii) "non-consequential" can be compared to gold pieces, (iii) "non-real reality" to avatars and (iv) "framing" to powers; subsequently, points of contact are indicated between (v) "unconventional" and random events and between (vi) "openness" and teams. In parallel, again naming the three types of needs that drive action (Howard et al., 2021; Ryan & Deci, 2000), the same points and punishments seem to have a greater affinity with *competence*, gold pieces and avatars with *autonomy*, while teams and random events with *relatedness*. Such juxtapositions are not aimed at sharp categorization. Gold pieces and XP are both rewards, but clearly indices of different engagements. Powers straddle the line between playful and social involvement, since collaborative ones imply relatedness, as opposed to ordinary powers that are useful for who uses them. "Fun" is an indication of flow across the board, not just the need for autonomy (Brambilla et al., 2024b). All these elements point to a non-unique relationship between performance, Classcraft components and literature. This can be explained by the fact that Classcraft is more than the sum of its components. In any case, the 3 types of engagement identified in the data will be useful in guiding the answer to the research question about intrinsic motivation.

5.3. From engagement to motivation

There is evidence in the thematic analysis results that Classcraft works very well to add stimuli and additional goals to the discipline being taught. However, we do know that even symbolic rewards decrease intrinsic motivation for the likelihood of success, particularly if the rewards are contingent on performing the activity, expected when performing it and salient (Deci & Ryan, 2014). Moreover, providing rewards without positive feedback can undermine intrinsic motivation, as students may prioritise rewards over learning and resort to shortcuts such as cheating (Deci & Ryan, 2014), which is consistent with what Gray (2015) states for grades. In contrast, positive feedback increases intrinsic motivation (Deci & Ryan, 2014).

About the second, more personal, type of engagement, despite the recognized link between fun, flow (Mustafa, 2018) and empowerment, and despite clues to the potential achievement of the flow state by students, there is no direct relationship with intrinsic motivation related to the discipline itself. Moreover, in the dynamics of Classcraft, gold pieces are also prizes.

Turning to the third, relational engagement, it seems to survive the use of the gamified system, as advocated by Högberg and colleagues (2019). Such evidence in the results is perhaps justified by the fact that the people with whom gamification induced us to collaborate (or compete) remain even at the end of use. However, collaborative powers are rewarded with XP; one must watch out for one's teammates and return hearts to them when it is in one's power to do so not to be punished. Moreover, the combination of competition and social pressure undermines intrinsic motivation (Deci & Ryan, 2014).

Therefore, it seems impossible to say that from the three types of engagement we recognise from thematic analysis, intrinsic motivation can be generated for the disciplines involved. However, since Classcraft contributes to the generation of different types of engagement and there are motivational benefits (Hamari, 2019), Classcraft generates extrinsic

motivation, which does not have to be considered negative. It can still be part of autonomous motivation, as well-internalized extrinsic motivation and can still have a great positive impact on students even after the experience is over (Deci & Ryan, 2014; Roth, 2019).

5.4. Future perspectives and limitations

One of the barriers to fully recognized Classcraft as a game is the inability to eliminate the notion that participation is mandatory (Passarelli et al., 2019)³. Indeed, if I must play, I'm not really playing (De Koven, 2019). Students are not free to participate, because it is a school activity: a teacher can make the students participate and change their mind, but it is still compulsory. Even punishments are considered fine, if no additional tasks are given, since they rank among the top positions in the sub-themes of Generic Positive Judgement, Stimulus and even into the "fun" tag. In this state of liminality (Turner et al., 1983) between perceptions of play and school, on this ridge between autonomous and controlled motivation (Deci & Ryan, 2014), between voluntary compliance and obligation, the difference could be made by the teacher. Even the sub-theme Poor Decisions and Consequences highlight the importance of teacher's intervention and support for all the types of engagement to tickle every kind of students with different stimuli. Similarly, it is the teacher's job to give students choices about how to do the activities they are engaged in, which leads to increased intrinsic motivation for the activities, just as empathy for them also increases their intrinsic motivation for things not strictly related to the task (Deci & Ryan, 2014; Li et al., 2024). A working hypothesis for future articles could be precisely to focus on investigating the role of the teachers in different contexts of using gamified systems in the classroom, wondering if and in what way they might be able to influence students' motivation.

While the focus is on students' dropouts, another interesting perspective that emerged is an in-depth look at the dropout cases of the teachers involved, an aspect that should be given due consideration in a naturalistic type of research. The sample of teachers was indeed larger than planned. Nevertheless, two teachers (a woman and a man) dropped out (he never started, she left), and in one case out of two, it was not possible to contact the individual again. Causes and modes of dropping out in research by teachers involved could be explored.

The main limitation of this study is the voluntary nature of the sampling process and the low number of participants. This is strictly related to the low penetration of this gamified system in Italy and the lack of a real network among Classcraft users. Moreover, the presence of only one researcher (who is the main author), who could directly follow the teachers involved, forced not to have a larger sample of classes. As already mentioned, we cannot generalise the results in this way. Another hypothesis for future work could be to repeat a similar experimentation with Classcraft or another gamified system on a larger scale, after a long and probabilistic sampling (Viganò, 2002).

³ The topic was explored in Brambilla (2024).

6. Conclusions

Gamification strategies in general have proven effective in reducing dropout rates and boosting student motivation, both online (through digital platforms) and in-person education (though personalized approaches in art-based activities). What is expected from Classcraft and all similar gamification platforms is an increase in student engagement. Since there are different types of engagement and rewarding oneself is more important than external recognition, intrinsic motivation should be preferred over extrinsic. For these reasons, after exploring the role of “fun”, “social dynamics” and “feedback system” in the contexts of a multiple case study, this study examines the potential of gamification to increase intrinsic motivation in the disciplines involved. It seems clear that Classcraft can increase different types of engagement: (i) a gameful one, generated by XP and punishments; (ii) a more solipsistic, playful one, stemming from the use of gold pieces and the avatar; finally, (iii) a more social, collaborative and competitive one. Nevertheless, it seems impossible to affirm that intrinsic motivation can be generated for the subject matter involved in the Classcraft experimentation from these three types of engagement. However, since there are motivational benefits from the results, Classcraft generates extrinsic motivation. This does not have to be considered negative, because it can still be part of autonomous motivation, as well-internalized extrinsic motivation and can still have a great positive impact on students even after the experience is over. Even with the limitation related to sampling process and the low number of participants, inherent to the low uptake of Classcraft, the findings provide new insights for the community and identify areas for further research to improve the understanding and implementation of gamification in education. Future research could focus on investigating the role of the teachers in different contexts using gamified systems like Classcraft on a larger scale, after a long and probabilistic sampling.

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