

Children's Privacy in Digital Games: A Study of Free Games on the Google Play Store

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Abstract

Digital games play an increasingly prominent role in children's cognitive and social development, but they also raise serious concerns about personal data security and privacy. Although existing research often focuses on technical compliance and general data protection practices, there is a notable lack of studies examining how privacy policies are communicated to children, how suitable these policies are for their developmental level, and whether visual or interactive elements are used to enhance understanding. This study aims to address this gap by evaluating the child-centered clarity and adequacy of privacy policies in mobile games in terms of visual-linguistic design, readability, and legal compliance. A total of nine free, teacher-approved digital games with over five million downloads from the Google Play Store were selected as the sample. Using a qualitative content analysis framework, the study assessed games based on data collection methods, third-party data sharing, the complexity of privacy policy language, compliance with international and national regulations, and the Ateşman Readability Index to determine age-appropriate accessibility. The findings indicate that most games do not offer child-friendly or clearly written privacy policies, rarely use visuals or symbols to support understanding, and often fail to ensure transparency in data-sharing practices. Although the games are accessible in the Turkish market, none explicitly commit to complying with Türkiye's Personal Data Protection Law (KVKK). These results reveal the lack of privacy safeguards tailored to children and emphasize the need for child-specific legal frameworks, as well as broader educational policies to foster digital and game literacy among children, parents, and educators.

Keywords: Digital Games, Digital Literacy, Digital Game Literacy, Privacy, Children and Parenting

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Dijital Oyunlarda Çocuk Mahremiyeti: Google Play Store'da Ücretsiz Oyunlar Üzerine Bir Araştırma

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Öz

Dijital oyunlar, çocukların sosyal ve bilişsel gelişiminde önemli bir rol üstlenirken, kişisel veri güvenliği ve mahremiyet açısından da ciddi riskleri beraberinde getirmektedir. Mevcut literatürde teknik uyumluluk ya da genel gizlilik politikaları üzerine odaklanan çalışmalar bulunmakla birlikte, bu politikaların çocuklara nasıl aktarıldığı, çocukların gelişim düzeyine ne ölçüde uygun olduğu ve görsel-işitsel içeriklerle nasıl desteklendiği yeterince incelenmemiştir. Bu bağlamda, bu çalışma dijital oyunlarda yer alan gizlilik politikalarının çocuklara yönelik anlaşılabilirliğini ve çocuk hakları bağlamındaki yeterliliğini görsel-dilsel tasarım, okunabilirlik düzeyi ve yasal uyumluluk açısından bütüncül bir çerçevede ele alarak mevcut alanyazına katkı sunmayı hedeflemektedir. Bu amaç doğrultusunda, Google Play Store'da ücretsiz olarak sunulan, en az 5 milyon indirme sayısına sahip ve öğretmen onaylı etiketine sahip 9 dijital çocuk oyunu örneklem olarak seçilmiştir. Oyunların veri toplama yöntemleri, üçüncü taraflarla veri paylaşımı, gizlilik politikalarının dili, yasal düzenlemelere uyum düzeyi ve Ateşman Okunabilirlik İndeksi üzerinden hedef kitleye uygunluğu nitel içerik analizi kapsamında geliştirilen bir kodlama cetveli ile değerlendirilmiştir. Çalışmanın bulguları, çocuklara özel hazırlanmış açık ve sade gizlilik politikalarının büyük ölçüde eksik olduğunu, veri güvenliği konularında çocukların anlayabileceği araçların neredeyse hiç kullanılmadığını ve birçok oyunda veri paylaşımına dair şeffaflığın sağlanmadığını ortaya koymuştur. Ayrıca oyunların Türkiye pazarında indirilmeye açık olmasına rağmen KVKK'ya yönelik herhangi bir yasal taahhüdün sunulmadığı görülmüştür. Sonuç olarak dijital oyunların gizlilik ve mahremiyet politikalarının çocuk haklarını yeterince gözetmediği dolayısıyla da hem ek yasal düzenlemelere hem de her seviyeden vatandaşa dijital okuryazarlık ve dijital oyun okuryazarlığına yönelik eğitim politikalarının gerekliliğini ortaya koymaktadır.

Anahtar Kelimeler: Dijital Oyunlar, Dijital Okuryazarlık, Dijital Oyun Okuryazarlığı, Mahremiyet, Çocuk ve Ebeveynlik

1. Introduction

In the 21st century, with the rapid advancements in digital technology, children's interaction with technology has become an unavoidable reality. Mobile phones and mobile games, which are significant components of digitalization, have emerged as instruments for entertainment, socialization, and education for children. The global phenomenon of digital gaming, engaging billions of individuals, offers educational advantages such as technological skill development and linguistic immersion. However, this trend is accompanied by significant concerns, including privacy and data security risks. These risks are particularly salient in the context of children. Children are considered to be a particularly vulnerable group with regard to the use of their personal data, especially in terms of their cognitive abilities and digital literacy skills. Consequently, the onus falls on parents to assume an augmented responsibility in this regard. However, the competencies of parents in these areas, particularly in the context of digital literacy and digital game literacy, are subjects of considerable debate. Therefore, the data collection practices of digital game platforms and manufacturers, the transparency of their privacy policies, and their compliance with legal regulations have become subjects of discourse in both academic and societal spheres.

The protection of children's personal data and privacy in digital games also constitutes the responsibility of states. In this regard, legal regulations such as the Children's Online Privacy Protection Act (COPPA) in the United States and the General Data Protection Regulation (GDPR) in the European Union represent the primary legal frameworks governing the protection of children's personal data and privacy in digital media. In addition to these comprehensive regulations, Türkiye has implemented certain limitations through Law No. 6698 on the Protection of Personal Data (KVKK) and the Information and Communication Technologies Authority (BTK).

Considering the place of digital games in children's lives, it has also brought the need for new forms of literacy to the agenda. In this context, in addition to media literacy, the qualification called digital literacy, which includes the ability of individuals not only to use digital technologies but also to critically evaluate the content of these technologies and to protect their personal data, comes to the fore. In addition, digital game literacy, which is a sub-category of digital literacy, defines the content of digital games, interaction styles, and

awareness of important issues such as the protection of personal data and privacy on a more micro scale.

This study aims to contribute to the growing body of research on digital games by exploring the relationship between children's mobile game designs and their privacy-related practices. While previous studies have primarily emphasized technical compliance with data protection regulations, fewer have examined how privacy information is communicated to children and whether it is presented in ways compatible with the interactive and visual nature of game environments. This study offers a modest contribution by examining the comprehensibility of privacy policies from a child-centered perspective, taking into account visual-linguistic design features and alignment with relevant legal frameworks. Through the integration of readability metrics, national regulations such as the KVKK, and interface design elements, the research provides a multifaceted view that may support broader discussions on children's digital rights and privacy awareness.

Based on all this information, 9 free games with at least 5 million downloads in the children's category of the Google Play Store were selected for the study. In the present study, the content analysis technique, which is one of the qualitative research methods, was utilised. The data presented by digital games were analysed by rearranging and adapting the coding scheme¹ developed by Sas, Denoo, and Mühleberg (2023) to include regulations specific to Türkiye. In this context, parameters such as data collection methods of games, sharing with third parties, readability of privacy texts, and legal commitments were evaluated. In addition, by using tools such as Ateşman Readability Index (Ateşman, 1997), the suitability of the texts for the target audience of children and parents was measured, and legal compliance was analysed in comparison with COPPA, GDPR, and KVKK articles.

2. From Media Literacy to Digital Literacy: Definition, Historical Development and Components

The most fundamental definition of literacy is the ability to read a written text (Potter, 2019). The concept of literacy has its origins in the development of written communication, which emerged with the inception of writing itself. The process of deciphering symbols in written communication is pivotal in

¹ The coding scheme for the methodology is provided in Appendix 1.

determining the function of literacy. The advent of the printing press, along with the ease of access to written texts, has further augmented literacy rates. The industrial revolution and its attendant developments, particularly in the 19th century, have led to the pervasive utilisation of written media tools such as newspapers and magazines. Anderson (2008) asserts that the pervasive utilisation of written media during this era served to underscore the significance of media literacy. The ability to accurately interpret information from printed media, to distinguish its reliability, and the fact that printed media has become an important factor in shaping public opinion have strengthened the necessity of a critical look at media texts.

The evolution of literacy did not stop with the proliferation of printed media; rather, it continued to expand and adapt as new forms of communication emerged, particularly with the advent of electronic media. In this regard, as radio, cinema, and television have become part of everyday life, media literacy has taken on a new dimension. Initially, in the first quarter of the 20th century, under the leadership of France (Fedorov, 2008) and England (Zacchetti & Vardakas, 2008), training courses were organised to raise public awareness of the negative impact of films on society. Over time, the definition of literacy, which is one of the key indicators of the level of development of a society, has evolved to include basic skills such as reading, writing, speaking, and listening (Özcan, 2017). Therefore, skills such as critical viewing, analysis, and content generation of different media tools and their content have begun to constitute media literacy (Aufderheide & Firestone, 1993). Media literacy involves understanding the effects of different codes and messages used in communication, depending on their selection and interpretation (Rubin, 1998). In this context, the multiplicity of messages received through the media and the ability to analyse a large number of messages form the basis of media literacy skills in our age of the information bomb (Hobbs, 2001). Historically, it can be seen that the scope of the concept of literacy has changed and transformed in parallel with technological developments.

This change and transformation have, in turn, resulted in a shift in the common denominator in the definition of the concept. In this respect, the concept of literacy has begun to be conceptualised as media literacy, particularly in light of the advancements in communication technologies and media. The concept has begun to manifest a plethora of definitions across diverse academic

disciplines, contingent on their respective areas of expertise. In this context, Alvarado and Boyd-Barrett (1992) proposed a definition of media literacy as a critical cultural problem, a perspective that has gained significant traction in academic discourse. Conversely, researchers who approach media literacy from an educational perspective conceptualise it as a pedagogical tool, especially for teachers (Westbrook, 2011; Domine, 2011). The issue of media literacy for families is also included in the academic literature, depending on technological developments, and is evaluated especially within the scope of communication studies. In this context, it is regarded as a tool in families' communication with their children (Haywood & Sembiente, 2023; Daneels & Vanwysberghe, 2017). Conversely, the concept is also employed as a synonym or a component of media education (Flores-Koulis, 2005). Therefore, it is possible to say that each discipline develops different perspectives on the concept of media literacy. In this respect, it is possible to say that the failure to provide semantic integrity in the definition of the concept is directly related to the breadth of its scope.

As communication technologies continued to evolve and the internet became an integral part of everyday life, the scope of media literacy further expanded, prompting a reconsideration of its definition and the emergence of new literacy frameworks. In this context, Tornero & Varis (2010, p. 33) claim that the internet's integration into the fabric of daily life has precipitated a paradigm shift in the realm of media literacy. Consequently, the evolution of media, which was predominantly analogue in nature but also encompassed digital formats, has given rise to the necessity for the formulation of the concept of digital literacy, in addition to media literacy. The concept of media literacy, which had been in place up until the 1990s, has since been redefined as digital literacy in the context of internet technologies. In order to address the evolving literacy competencies, it is imperative to augment these existing skills and abilities with new competencies.

Similarly, the widespread adoption of the internet and digital media applications has further underscored the necessity for enhanced digital literacy competencies, reflecting the profound impact of digital technologies on contemporary communication practices. According to Datareportal (2025), the number of individuals utilising these applications has reached approximately 5.56 billion, accounting for 67.0% of the global population. This increase

in usage has been particularly pronounced, with rates approaching 2/3 of the global population. Moreover, the global usage of mobile phones has reached 5.78 billion individuals, while the number of social media users stands at 5.24 billion.

The Internet and internet-related technologies have become ubiquitous, and their use has had a number of positive effects. These include the enhancement of freedom of expression, access to information, and the strengthening and expansion of democratic participation. Conversely, concerns regarding surveillance, control, and data security have also been addressed (Özcan, 2017). In contrast to the media era in the classical sense, the advent of Web 2.0 applications has empowered citizens to engage in content production, thereby increasing the volume of information generated. Furthermore, the dissemination of products such as films, videos, music, and video games has transitioned from the domain of expert production to that of the general public (Gee, 2010). Consequently, the scope of digital literacy is regarded as more extensive than that of traditional media literacy. Digital literacy, as such, encompasses not only the ability to access and understand content, but also the capacity to create and share information (Livingstone et al., 2005).

The digitalisation process, especially in the 21st century, has precipitated the development of communication-based technological devices such as mobile phones and tablets. The global prevalence of digital games has led to the establishment of a substantial market, estimated to be approximately 3.09 billion individuals and 282 billion dollars (Duarte, 2025). A detailed analysis of the age distribution of digital game players reveals a noteworthy trend. The analysis reveals that 76 percent of children worldwide engage in digital gaming, and 67 percent of parents actively participate in digital games with their children. While the average age of digital game players is 34 for men and 36 for women, this age group has at least one child. Furthermore, it has been determined that 83.6% of internet users partake in digital gaming activities (Katatikarn, 2024). Furthermore, 80% of children between the ages of 2-18 self-identify as gamers (digital), with 30% of their leisure time devoted to playing digital games (Christofferson et al., 2024). A further study revealed that for boys aged 8-15 and girls aged 8-11, playing digital games was identified as their primary interest (Gilsenan, 2025). This pattern persists when examining adult demographics. Specifically, individuals between the ages of

18 and 34 represent 38% of the total sample, those between 35 and 44 years old constitute 14%, those between 45 and 54 years old constitute 12%, those between 55 and 64 years old constitute 9%, and those over 65 years old constitute 7% (Gill, 2025). The digital gaming industry is composed of 1% computer games that can be played via browser, 21% computer games played by downloading, 29% console games, and 49% mobile games (Newzoo, 2024, p. 20). In addition to these data points, it is noteworthy that the Google Play and Apple App Store, the two leading application providers in the mobile gaming sector, offer a combined catalogue of over 700,000 games (Knezovic, 2025).

The ubiquity of the digital game industry has precipitated the emergence of the concept of digital game literacy. Engaging in digital games is understood to extend beyond the mere management of a character or the fulfilment of a predetermined task within a digital environment. The advent of internet technology has facilitated communication, the construction of social identities, and the sharing of images and locations among players (Klimmt, 2009). This shift in perspective has led to the conceptualisation of the human being as a 'game-playing' being, as defined by Huizinga's concept of 'homo ludens'. In this context, humans shape their culture and development through play. Play is not merely a recreational pursuit in leisure time, but rather the foundation of complex structures such as law, language, art, religion, and war (Huizinga, 2022). Therefore, as 'homo ludens', games go beyond being simple entertainment and become a main element that shapes their daily lives and ways of thinking. As stated above, when the time people spend on digital games in the world is taken into consideration, the space that games occupy in human life is also remarkable. In this respect, it is inevitable that digital games will affect the human mindset, culture, etc., and social parameters. Therefore, the importance of digital game literacy, which represents a critical stance and consciousness towards games, emerges as an undeniable reality.

Similarly, the growing prominence of digital games as a pervasive cultural and social phenomenon has further emphasized the significance of digital game literacy, a concept that builds upon traditional literacy and media literacy frameworks. The importance attributed to play and gaming is also evidenced in the context of digital games. The widespread use of digital games, their financial dimension, and the accessibility of people of all ages through

various platforms have reinforced the importance of digital game literacy. Digital game literacy is, thus, based on literacy and media literacy, which are its conceptual predecessors (Weßel, 2020, p. 180). Digital games demand a more sophisticated array of literacy skills, stemming from their multifaceted nature, encompassing elements such as sound, images, rules, texts, and narratives (Zagal, 2010). Digital game literacy, which necessitates multidimensional reading skills, encompasses in-game elements, players' communication with each other, and most importantly, their awareness of the ethical and legal codes of games, which fall within the purview of personal data (Krcmar & Cingel, 2016).

Digital games, which rely on internet technologies due to their inherent structure and benefit from the interactive nature of the internet, also present significant risks. Of particular concern is the issue of data security, which arises from the sharing of personal data that players may unintentionally disclose. This is especially prevalent in games that prioritise interaction, as they often require access to areas on mobile devices where personal data, such as galleries, location information, messages, and search features, are stored. This assertion is further substantiated by the findings of Livingstone and Helsper (2008, p. 587), who in a study revealed that 46 per cent of children had disclosed their personal data, with a significant 72 percent of these children having shared their personal data with third parties in exchange for in-game rewards. A similar study conducted a decade later found that 57% of games for children transferred their personal data to third parties (Reyes, 2018, p. 77). A subsequent study, conducted directly on iOS and children, revealed that 44% of applications shared at least one personal data with third parties (Pimienta et al., 2023, p. 943). Conversely, a separate study of the Google Play Store revealed that 13 out of 15 mobile applications analysed discreetly shared users' personal data with third parties (Carlsson et al., 2023).

The primary motivations for utilising personal data collected through mobile applications are predominantly driven by commercial imperatives. Specifically, the collected data is utilised in the advertising sector, serving as the primary source for personalised advertisements (Urban et al., 2012, pp. 15-18). Personalised advertisements are known to include users' demographic data, such as gender, age, and interests. In this respect, mobile application developers have the capacity to access advertisement content provided to the

user through their applications, thereby enabling them to create a user profile relating to the user's interests and demographic data (Meng et al., 2016, pp. 15-18).

Similarly, location data emerges as another critical component in targeted advertising, further complicating privacy concerns associated with personal data collection. It is important to note that location and location information can also be considered as personal data. This information can be used to determine innocent information such as navigation operations and weather reports. It can also be a victim of targeted advertising (Michael & Clarke, 2013). Consequently, location data is utilised for purposes such as displaying personalised advertisements and delivering discount news according to the location. Furthermore, location information facilitates the drawing of inferences regarding the estimated tracking of an individual, their near future behaviour, goals, intentions, and partners through extrapolation from the direction of movement (Clarke & Wigan, 2011). Conversely, the authorised use of location information confers significant advantages for human life in situations such as emergencies and rescue. Nevertheless, the primary challenge associated with location sharing pertains to the unauthorised or manipulated utilisation of this technology by applications (Cheung, 2014).

3. International and National Legal Regulations Regarding the Security of Children's Personal Data

The intensive personal data sharing and violations that have become increasingly prevalent in the digital age have compelled nearly every state and union worldwide to enact legal regulations to address these issues. Pedagogically speaking, various standards have been developed to protect children and their parents according to their development and literacy status. These standards, which are evaluated within the scope of digital media literacy and digital game literacy (a sub-branch of digital media literacy), aim to ensure that both children and parents use these applications and play games more consciously. In this regard, the Children's Online Privacy Protection Act (COPPA) in the United States and the General Data Protection Regulation (GDPR) in the European Union are two significant legislative instruments aimed at safeguarding the personal data of adults, parents, and children.

The Children's Online Privacy Protection Act (COPPA) was enacted in 1998 in the United States of America to protect the personal information of children under the age of 13 on websites, online services, and mobile applications. The primary motivation behind the enactment of this legislation pertains to the protection of children's personal information, including their first and last names, address, telephone number, e-mail address, username, location information, IP address, social security numbers, and photographs, which are categorised as personal data within any online context. The legislation also prohibits websites, online services, and mobile applications from sharing or selling children's data (Federal Trade Commission, 1998). Nevertheless, the legislation has been the subject of frequent criticism, with detractors arguing that it is based on 1998 data and accepts the age of 13 as the limit. Subsequent to these criticisms, the law was submitted to the US Congress in 2023 under the title COPPA 2.0, which resulted in an increase of the age limit to 17. Moreover, with the advancement of technology, the manner in which relevant applications track individuals has also been subject to refinement. In this regard, the definition of personal data has been broadened to encompass biometric data, such as fingerprints, voiceprints, facial images, and walking patterns. Notably, the most recent iteration of the law, designated as 2.0, mirrors the initial version in its requirement for parental consent (Public Interest Privacy Centre, 2024).

In the same way, the European Union has implemented comprehensive data protection regulations that extend the scope of child data privacy beyond the provisions outlined in COPPA. Then, the General Data Protection Regulation (GDPR) represents a significant regulatory framework designed to safeguard the personal data of children within the European Union. In this context, as outlined in Article 8 of the relevant legislation, the processing of personal data of children within the EU is subject to parental consent. Consequently, mobile applications, social media platforms, and other online services for children under the age of 16 are prohibited from collecting personal data without parental consent. Furthermore, Article 7 stipulates that the consent process must be transparent and easily comprehensible. In particular, mobile applications must elucidate their privacy policies in a language that children can comprehend. The use of simple and visually explanatory icons is recommended in lieu of complex legal terminology (Intersoft Consulting, 2016).

Within the legal framework of the Republic of Türkiye, while there is an absence of explicit legislation specifically addressing the protection of personal data of children, pertinent regulations have been established within the purview of the Personal Data Protection (Authority) Law (KVKK). The implementation of audits and sanctions is overseen by the Information and Communication Technologies Authority (BTK). Within the scope of Law No. 6698 on the Personal Data Protection Law (KVKK), the personal data of every citizen of the Republic of Türkiye is protected, and children are considered in the same status as adults. A perusal of the articles of the relevant law reveals that they may be summarised under the headings of the requirement of explicit consent in the processing of personal data, compliance with the law, and security of personal data (Kişisel Verilerin Korunması Kanunu, 2016). A salient point within the scope of KVKK is the emphasis on privacy. In this regard, KVKK has consistently emphasised the significance of privacy in digital media, particularly for children, through the regular publication of bulletins aimed at informing the public (Badur, 2024). Digital games are a particular focus of these bulletins and public information texts. In this regard, it is 'strongly recommended' that individuals be attentive to the age restrictions of content intended for children, to discern which age group is eligible for access in the event of in-game chat, video and audio sharing features, to ascertain whether the games are subject to parental control, to be mindful of the privacy settings of the games and the explanatory texts that accompany them (Kişisel Verileri Koruma Kurumu, 2024).

In light of the prevailing legal framework, the Pan-European Game Information (PEGI) organisation was established within the European Union in 2003 to classify digital games according to a rating system. This initiative was founded on the principles of digital literacy, digital game literacy, and the protection of children's personal data. The rating system developed is recognised by 35 EU member states and is supported by companies producing console games such as Sony, Microsoft, and Nintendo (PEGI, 2017a). The Republic of Türkiye has also adopted PEGI standards for games and other applications within the country's borders.

The PEGI classification system is organised into five distinct age ranges. Accordingly, games with a PEGI 3 rating are defined as those intended for all age groups, i.e., they do not contain violent content, frightening sounds, or slang/

swearing. Conversely, PEGI 7 may contain images and sounds of mild violence that may be alarming for young children. PEGI 12 encompasses games featuring fictional characters that may contain violence and games with human-like characters that may contain unrealistic violence. These games may include sexual innuendo, sexual poses, and mild slang or profanity. PEGI 16 categorises games that may contain slang or profanity and may involve the use of tobacco, alcohol, or illegal drugs. Within this category, the depiction of violence or sexual activity may reach a level that is commensurate with real-life expectations. Finally, PEGI 18 delineates the adult classification. According to this classification, the level of violence is high, with depictions of unprovoked violence and murder of defenceless characters present in games. Illegal drug use, gambling simulations, and games with explicit sexual content are all categorised within this classification (PEGI, 2017b).

While PEGI classifications appear to focus on evaluating games based on their content parameters, they also share awareness-raising materials, particularly aimed at parents, regarding digital literacy, digital game literacy, and topics such as data protection and privacy. Under the heading Online Safety Codes, the rules they have published stipulate that all PEGI-licensed games and their producers are obligated to comply with privacy regulations aligned with the EU and Data Security laws (PEGI, 2017c). Similarly, in the section titled Family Control Tools, which provides informational content on digital literacy and digital game literacy, it is stated that all PEGI-licensed games commit to adhering to GDPR regulations. Additionally, PEGI shares guidance texts to help families monitor their children's personal data and privacy policies (PEGI, 2017d).

Google Play Store, one of the world's leading digital marketplaces, has established a set of standards under its Google Play Family Policies for games hosted on its platform. Accordingly, Google subjects game developers to evaluation based on criteria such as target audience, content, the collection of personal and sensitive information, social features, permissions for advertisements and in-app purchases, and compliance with legal frameworks like COPPA, GDPR, and regulations of other countries (Google, n.d.a). Additionally, the compliance of content with Google Play Family Policies is assessed through the Teacher Approved Program. Within this framework, Google states that applications are reviewed globally by specially trained teachers

based on factors such as age-appropriateness, developer qualifications, and general design quality. Approved apps are labeled as "Teacher Approved" (Google, n.d.b).

4. Methodology

Digital games have been demonstrated to play an important role in children's social and cognitive development. But it is equally important to acknowledge the significant risks associated with personal data security and privacy in this framework. However, the extent to which the data collection and processing policies of digital games are suitable for children, particularly in the context of the KVKK and international regulations COPPA, GDPR that are currently in force in Türkiye, remains an area that has not yet been the subject of sufficient investigation. The main interest of this study is to evaluate the suitability of digital games' privacy policies for children, the methods of data collection employed, and the effectiveness of parental approval mechanisms in the context of digital literacy and digital game literacy. The following questions are intended to address this fundamental problem:

1. Privacy policies and data collection:

- What methods do digital games use to collect and process children's personal data?
- How easy are the games' privacy policies to understand for child users?
- According to the Ateşman Readability Index, what literacy level do the privacy policies address?

2. Legal regulations:

- Do the digital games examined comply with the KVKK in force in Türkiye?
- To what extent do the games comply with international data protection regulations, such as COPPA and GDPR?

3. Parental consent and data sharing:

- How are parental consent mechanisms implemented in games, and when do they come into play?

- How is data shared between games and third parties?

4. Digital and Game Literacy:

- Is the language and visual content used in digital games sufficient to make children aware of data security and privacy issues?
- How can the privacy policies and data sharing procedures of digital games be made more understandable for children and parents?

In order to answer the main problem and research questions of the study, it adopts an epistemologically interpretative perspective. In this particular context, the qualitative research design has been determined as the most appropriate research method. Qualitative research aims to understand human behavior by examining it in its context, and makes it possible. In qualitative research, the researcher is in a key position and collects the necessary data, observes behaviors and conducts in-depth interviews in order to solve the problem determined in the research (Neumann, 2006). To answer the research questions identified in the study, the content analysis technique, one of the qualitative research methods, was employed. The main purpose of content analysis is to reach concepts and relationships that can explain the collected data. In this context, content analysis consists of the stages of coding the data, identifying themes, organizing codes and themes, and interpreting the findings (Yıldırım & Şimşek, 2018, pp. 242-243). In line with the principles of transparency and analytical rigor, each category presented in the findings section was conceptually defined in detail, and the criteria guiding the classification of data were explicitly explained. To enhance the reliability of the content analysis and to support qualitative interpretations with quantitative evidence, frequency and percentage tables were integrated into the presentation of results. These tables provide measurable indicators of recurring patterns across the sample, reinforcing the validity of the categorical framework used in the study.

Google Play Store, the app marketplace for Android smartphones and tablets, is currently the world's largest digital store in terms of the number of apps available (42matters, 2025). For this reason, Google Play Store was selected as the case study. The platform includes a dedicated kids section, which opens with the statement: "Everything here is teacher-approved." Games in

this section are categorized into three age groups: Up to 5 years, 6–8 years, and 9–12 years, and are displayed accordingly. Games are further divided into free and paid categories. For this study, free games accessible via a Turkish IP address were included. The decision to focus on free games was driven by their higher accessibility for children, greater download rates, and their tendency to use personal data more extensively for targeted advertising.

According to Google Play Store's classification, three games were selected from each age group. The chosen games include:

- LEGO DUPLO Peppa Pig
- Sago Mini World: Kids Games
- 12 Locks 2
- Hot Wheels Unlimited
- Masha and the Bear: Pizzeria
- Marvel HQ: Kids Super Hero Fun
- LEGO Tower
- LEGO Duplo: Marvel
- Gumball's Amazing Party Game

All selected games have at least 5 million downloads and comply with Google Play Family Policies. It is assumed that these games implement age-appropriate information design at a high level. Additionally, Google states that all apps adhering to its Family Policies receive "Teacher Approved" status. To understand the criteria for this approval, the researcher participated in Google's online Teacher Approved training program and tested compliance within the study's methodology.

The analysis focused on the comparison of privacy policies, data collection and processing practices, and data security measures presented both on the Google Play Store and within the games after installation. The coding and evaluation process was based on a revised version of the analytical framework developed by Sas, Denoo, and Mühleberg (2023), which was adapted to include additional dimensions such as readability scores, Google Play Teacher Approval, and alignment with Turkey-specific regulations like KVKK. The

detailed coding scheme is presented in Appendix 1. The coding process was conducted in three stages, beginning with an initial review and open coding, during which all privacy policies and in-app components were examined line by line to generate open codes based on recurring themes such as third-party data sharing, absence of parental consent and policy available only in English. In the second stage, axial coding was used to group these codes into broader thematic categories, including legal compliance, language accessibility, visual-informational support and data collection practices, which served as the analytical framework for comparing the games. In the final stage, the completed coding scheme was systematically applied to all nine games using a matrix-based approach, allowing for the coding of both manifest content and latent content.

1. Each game's page on the Google Play Store was visited, and the items under the following subheading were reviewed:

- Title
- Download count
- Country of origin
- Teacher Approved status
- Google Play age rating
- Compliance commitment to Google Play Family Policies
- Compliance with COPPA, GDPR, and KVKK
- PEGI age classification
- Types of data collected
- Data sharing with third parties
- Data deletion permissions

2. Privacy Policy Scope: Whether the privacy policy is general or age-specific.

3. Readability Testing: Privacy policy texts were analyzed using the Ateşman Readability Formula² (Ateşman, 1997). The formula divides reada-

² The index was calculated via <http://okunabilirlikindeksi.com/>, where privacy policy texts were copied and analyzed.

bility into eight levels:

- 90–100: Understandable by 4th grade or below
- 80–89: 5th–6th grade
- 70–79: 7th–8th grade
- 60–69: 9th–10th grade
- 50–59: 11th–12th grade
- 40–49: Undergraduate students
- 30–39: Bachelor's graduates
- ≤ 29 : Postgraduate-level comprehension

4. Data Encryption: Checked whether the collected data is encrypted.

5. Separate Policies for Children/Parents: Whether privacy policies are differentiated for children and parents.

6. Visual Design for Children: Use of child-friendly visuals in privacy policies.

7. Pre-Download Clarity: Whether privacy policies and consent requests are displayed before installation.

8. Parental Consent: Verification of parental consent mechanisms.

9. Data Access Permissions: Access requests to photos, videos, contacts, or location data.

10. Policy Accessibility: Whether policies are embedded in the app or require external links.

11. Post-Installation Data Sharing: Monitoring data sharing with third parties after installation.

12. In-App Purchase Prompts: Presence of purchase prompts within games.

5. Findings and Evaluation

When the games included in the study were examined within the scope of the research questions, an important picture was presented for children and

parents who are more vulnerable in terms of the protection of personal data in terms of literacy, media literacy and digital game literacy. It is therefore imperative to state at the outset that all of the games included in the analysis have received teacher approval on the Google Play Store. Within this scope, none of the content categories prohibited under the teacher approval criteria, such as sexuality, violence, fear, offensive language, illegal or dangerous content, were encountered. Moreover, none of the games included sudden loud noises or frightening figures. Similarly, all of the games adhered to the teacher approval rule stipulating that in-game advertisements must not exceed five seconds.

A closer inspection of the privacy policies and data collection headings of the games reveals a discrepancy between the promises made on the Google Play Store and the actual practices. In accordance with the aforementioned points, the games under scrutiny, namely *LEGO DUPLO Peppa Pig*, *12 Locks 2*, *Hot Wheels Unlimited*, and *Masha and The Bear: Pizzeria*, do not provide any information beyond that which is shared on the Google Play Store regarding the personal data to which they have access. It is therefore assumed that these games do not request access to any additional data beyond what is declared. However, it is concerning that *Sago Mini World* requests access to the mobile phone's camera, even though this is not disclosed on the Google Play Store. On the other hand, *Marvel HQ: Kids Super Hero Fun*, *LEGO Tower*, and *LEGO Duplo: Marvel* request access to marketing and advertisement-related data. It is particularly concerning that *Gumball's Amazing Party Game* requests access to personal information such as home address, photos, videos, and voice recordings. It has been observed that the games do not have any approval buttons for the collection and processing of such personal data. Therefore, when considering parental approval and especially parents' digital game literacy, the significance of these access requests becomes clear.

Design Feature	Frequency (n)	Percentage (%)	Description Şablonları
Games with visual support in privacy communication	0	0%	None of the games used visual aids to inform users about data or privacy.

Games with a privacy policy available in Turkish	1	11.1%	Only Gumball’s Amazing Party Game provides a Turkish-language privacy policy.
Games with full interactive consent mechanisms	0	0%	No game includes a comprehensive interactive system for user consent.
Games with limited interactive consent elements	5	55.6%	Five games offer restricted or partial interactive consent options.
Games with no interactive consent mechanism	4	44.4%	Four games provide no interaction for consent at all.

Table 1. Visual-Linguistic Harmony of Games and Design Status for Children

Furthermore, as shown in Table 1, none of the analyzed games (0 out of 9; 0%) employ visual elements such as icons, illustrations, or animations to improve the comprehensibility of privacy policies for children. This lack of visual support strongly suggests that these policies are not designed to inform their actual target audience: Children. A similarly inadequate approach is observed in relation to interactive consent mechanisms. While 5 out of 9 games (55.6%) offer limited forms of consent confirmation, no game (0%) includes a fully interactive, child-focused parental approval process. More specifically, *LEGO DUPLO Peppa Pig* provides no visible button or prompt to acknowledge the privacy policy during the game’s initial launch. Instead, like several others, it redirects users to a privacy policy through an external link typically presented in English, even when the game interface itself is in Turkish. Only *Gumball’s Amazing Party Game* offers its privacy policy content in Turkish (1 out of 9 games; 11.1%), marking it as an exception in terms of local language accessibility. Following installation, *Sago Mini World*, *Hot Wheels Unlimited*, *Masha and The Bear: Pizzeria*, and *Gumball’s Amazing Party Game* include a separate button or checkbox for acknowledging the privacy policy, though even these lack clear, child-friendly interaction design. In contrast, the remaining 4 games (44.4%) do not provide any mechanism to explicitly accept or decline the privacy policy, further undermining transparency and

user control. Taken together, these findings highlight serious deficiencies in visual-linguistic alignment and consent practices key components in making privacy communication accessible and meaningful for children.

Readability Index	Frequency (n)	Percentage (%)
Undergraduate level (40–49)	4	44.4%
Postgraduate level (≤ 39)	5	55.6%
Primary and Secondary Education	0	0%

Table 2. Readability Level of Privacy Policies (According to the Ateşman Index)

The results of the readability index, which is evaluated under the umbrella of privacy policies and data collection and measures the understandability of privacy policies by children, who are the end users of the games, and their parents, are also worrying. The readability index is significant as it determines the age and education level for which a written text is appropriate. There is also a strong relationship between readability indices and both media literacy and digital literacy. Accordingly, all of the analyzed games are designed for children under the age of 18, specifically for those under the age of 12. Therefore, children constitute the primary target audience, especially regarding the sharing of personal information and data security. However, considering the target age groups of these games, the educational level of parents also becomes relevant within the scope of media and digital game literacy and readability indices. Within this context, based on the Ateşman readability index as can be seen at table 2, it was found that the data security and personal data usage statements of 5 games (55.6%) were at the postgraduate readability level, and those of 4 games (44.4%) were at the undergraduate level. This suggests that the related statements are not appropriate for the intended target audience. In fact, when considering the educational level of parents, it is noteworthy that the readability index corresponds to undergraduate or postgraduate levels. Consequently, when the games are evaluated holistically, it is evident that they contain content that only a limited number of parents can readily comprehend. A further negative aspect is the absence of privacy policies that are suitable for children and are written in a comprehensible manner. Therefore, it has been determined that the games are not transparent in their privacy policies and data collection tools. In this

context, the importance of media literacy and digital literacy skills becomes paramount.

Game Name	COPPA Compliance	GDPR Compliance	KVKK Compliance	General Privacy Policy	Policy for Children
LEGO DUPLO Peppa Pig	Yes	No	No	Yes	No
Sago Mini World	Yes	Yes	No	Yes	No
12 Locks 2	No	No	No	Yes	No
Hot Wheels Unlimited	No	No	No	Yes	No
Masha and The Bear: Pizzeria	Yes	No	No	Yes	No
Marvel HQ: Kids Super Hero Fun	Yes	No	No	Yes	No
LEGO Tower	Yes	Yes	No	Yes	No
LEGO Duplo: Marvel	Yes	No	No	Yes	No
Gumball’s Amazing Party Game	No	No	No	Yes	No

Table 3. Assessment of the Compliance of Analyzed Games with the Turkish Personal Data Protection Law (KVKK) and International Legal Frameworks

The privacy policies of the games include legal regulations as a protective element for children as end users. Legislation such as COPPA, GDPR, and KVKK is of paramount importance in ensuring the protection of the personal data of citizens in the relevant countries. Consequently, it is anticipated that the applications in virtual markets will adhere to the pertinent legal regulations in the respective countries. Furthermore, within the context of games

designed for children, these legal regulations are also considered significant in countries seeking to safeguard the data of their citizens. When the data practices of the games were evaluated in the context of COPPA, GDPR, and KVKK regulations, as can be seen at table 3, it was found that *12 Locks 2*, *Hot Wheels Unlimited*, and *Gumball's Amazing Party Game* did not include a commitment to comply with COPPA. Furthermore, these games also lacked any statements regarding compliance with GDPR. On the other hand, while *LEGO DUPLO Peppa Pig*, *Masha and The Bear: Pizzeria*, *Marvel HQ: Kids Super Hero Fun*, and *LEGO Duplo: Marvel* provided notifications indicating COPPA compliance, no evidence of adherence to GDPR could be found. It has been determined that no game makes any reference to the KVKK, which comes into play when it comes to the Republic of Türkiye. It has been observed that the KVKK, the Turkish data protection authority, is not being adhered to in the Turkish market of the Google Play Store.

Legal Regulation	Number of Compliant Games Frequency (n)	Percentage (%)
COPPA	6	66.7%
GDPR	2	22.2%
KVKK	0	0%

Table 4. Percentage of Reviewed Games Complying with Legal Regulations

Table 4 presents the percentage of analyzed children's games that claim compliance with key data protection regulations. Among the nine games studied, 66.7% mention compliance with COPPA, while only 22.2% refer to GDPR. Notably, none of the games analyzed (0%) mention KVKK, highlighting a critical regulatory gap in the local context. These figures underscore the lack of consistent adherence to international and national data protection standards, especially regarding children's privacy in the Turkish digital market.

Feature	Frequency (n)	Percentage (%)
Games requiring parental approval	4	44.4%
Games providing an explicit approval button	4	44.4%.
Games offering no consent mechanism at all	5	55.6%

Table 5. Parental Consent and Explicit Consent Mechanisms

Another research topic of the study is parental approval and data sharing. It is therefore vital that, when considering the age classification of games, the parental approval button be included as a precautionary measure. However, it should be noted that the approval of a game by a parent does not signify that the responsibility for the game’s content is transferred to the parents in terms of the game companies. As shown in Table 5, only 4 out of 9 games (44.4%) required parental consent before gameplay. Similarly, just 4 games (44.4%) provided a visible explicit consent button allowing users to accept or decline privacy policies or data sharing terms. Worryingly, more than half of the games (55.6%) did not offer any consent mechanism at all, neither for children nor for their guardians. These points to a serious deficiency in user transparency and informed consent procedures, particularly for vulnerable groups such as children. These findings raise concerns about the extent to which these platforms fulfill their ethical and legal obligations regarding data protection and autonomy. In this context, only *LEGO DUPLO Peppa Pig*, *Sago Mini World*, *LEGO Duplo: Marvel*, and *Gumball’s Amazing Party Game* require parental approval to be played. A further issue arises in instances where the parental controls of games are restricted solely to age verification. Consequently, should a parent permit their child to engage with the game following its download, this would also imply their consent for the dissemination of personal data. However, when considered in conjunction with the readability index results, the serious situation of the games’ complex and difficult-to-access privacy and data-sharing policies becomes evident.

Data Sharing Status	Frequency (n)	Percentage (%)
No data sharing (consistent across game and Play Store)	3	33.3%
Data sharing disclosed on the Play Store	1	11.1%
Data sharing not disclosed on the Play Store but present in-game	5	55.6%

Table 6. Third-Party Data Sharing Status of Analyzed Games

A critical aspect of the analysis focused on whether children’s personal data was shared with third parties and how transparently this was communicated to users. As presented in Table 6, only 3 out of 9 games (33.3%) consistently stated on both the Google Play Store and within the game that no personal

data would be shared with third parties. One game (11.1%) disclosed third-party data sharing explicitly on the Play Store. However, the most concerning finding was that 5 games (55.6%) while claiming on the Play Store not to share data included in-game disclaimers that revealed the possibility of third-party data transfers. This inconsistency indicates a lack of transparency and may mislead parents and children regarding the true extent of data exposure, undermining informed digital consent and ethical data handling standards. Accordingly, only *LEGO DUPLO Peppa Pig*, *Sago Mini World*, and *Masha and The Bear: Pizzeria* explicitly state on the Google Play Store that they do not share personal data with third parties. However, *12 Locks 2* contradicts its Google Play Store claim by stating within the game that data may be shared, except for children under the age of 13. *Marvel HQ: Kids Super Hero Fun*, *LEGO Tower*, and *LEGO Duplo: Marvel* also claim on the Google Play Store that data is not shared, but mention within the games that data may be shared, although limited under GDPR regulations in the European Union. These games therefore, restrict themselves under GDPR compliance. Similarly, *Gumball's Amazing Party Game* provides such information and claims compliance with COPPA. Lastly, *Masha and The Bear: Pizzeria* does not contain any statements regarding third-party data sharing. This reveals a mismatch between the information provided on the Google Play Store and the statements given within the games themselves. Another point of concern in the study is that, despite being selected as free games, most of the games excluding *12 Locks 2* and *LEGO Tower* include elements that encourage in-app purchases. Therefore, it can be concluded that these games promote in-app purchasing behavior.

Feature Evaluated	Frequency (n)	Percentage (%)	Notes
Games collecting no personal data	1	11.1%	Only <i>Masha and The Bear: Pizzeria</i> claims not to collect any data
Games collecting only non-personal/app performance data	1	11.1%	<i>Gumball's Amazing Party Game</i>
Games collecting personal identifiers (e.g., device ID, location, etc.)	7	77.8%	Includes games claiming COPPA/GDPR compliance

Games providing users with the option to delete collected data	2	22.2%	Only Sago Mini World and LEGO Tower
Games with privacy policies specifically designed for children	0	0%	All games use general privacy policies

Table 7. Data Collection, Deletion, and Child-Specific Policy Compliance in Analyzed Games

The games’ commitments to COPPA, GDPR, and KVKK should be evaluated in conjunction with the types of data collected from users, whether the data is shared with third parties, the possibility of deleting collected data, and the privacy policies in place since the core objective of these regulations is the protection of personal data. As illustrated in Table 7, only a small portion of the games demonstrate responsible data practices. For example, *Masha and The Bear: Pizzeria* is the only game (11.1%) that explicitly declares no data collection, while *Gumball’s Amazing Party Game* (11.1%) limits its data use to non-personal application performance and activity metrics. In contrast, the vast majority of the games (77.8%) collect identifiable personal information such as device IDs or location data, even among those claiming compliance with COPPA and GDPR. Moreover, only two games *Sago Mini World* and *LEGO Tower* offer users the option to delete collected data, accounting for just 22.2% of the sample. Perhaps most critically, none of the games (0%) include a privacy policy specifically written for children. All rely on generic, adult-oriented texts, which are unlikely to meet the cognitive and literacy needs of the games’ intended audience. These findings underscore the inconsistency between regulatory commitments and actual practices in data collection, user rights, and communication strategies.

Design Feature	Frequency (n)	Percentage (%)
Visual support in privacy policy	0	0%
Use of child-friendly language	0	0%
Inclusion of interactive/explainer elements	0	0%
Privacy policy available in Turkish	1	11.1%

Table 8. Percentage of Games with Child-Centric Privacy Design Features

When evaluated within the scope of digital and game literacy, one of the research questions, the findings indicate that while the majority of the analyzed games comply with teacher approval criteria by avoiding explicit content such as violence, sexual themes, or offensive language, they fail to incorporate child-centric language and visual cues within their privacy policies. Despite the predominance of complex, text-heavy privacy statements, none of the games effectively leverage visual storytelling, interactive elements, or child-friendly icons to communicate data security and privacy risks. For instance, although *Gumball's Amazing Party Game* provides privacy information in Turkish, it still presents dense textual content without any supportive visuals, thereby limiting its accessibility for younger audiences. Similarly, while *Sago Mini World* requests access to the mobile phone's camera, the implications of such data access are not contextualized in a way that children can easily comprehend. This lack of visual and interactive content is particularly problematic given the primary target audience of these games children under the age of 12, who may struggle to grasp abstract concepts like data sharing and personal information protection through text alone. As shown in Table 8, none of the analyzed games (0%) employed visual elements such as icons or illustrations in their privacy policies, and none included interactive modules or gamified explanations to support understanding. Furthermore, none of the games used simplified, child-friendly language to explain privacy practices. Only one game (11.1%), *Gumball's Amazing Party Game*, offered a Turkish-language privacy policy, though it too lacked visual or interactive elements. This consistent absence of accessible design significantly undermines efforts to promote digital and game literacy among children. Consequently, the findings suggest a missed opportunity to integrate educational, game-based learning modules that align with the interactive nature of the platform itself. Thus, the disparity between content designed for entertainment and content aimed at informing children about data security highlights a significant gap in the effective implementation of digital and game literacy strategies.

6. Conclusion

The increasing presence of digital games in children's lives has rendered issues of privacy and personal data security more urgent than ever. This study examined the privacy policies, data collection methods, and legal compliance of nine free and widely downloaded children's games from the Google Play

Store. The findings revealed that although these games generally comply with content-related criteria such as teacher approval and age classification (e.g., PEGI), they fall short in presenting privacy information in a child-friendly, transparent, and legally compliant manner.

Specifically, the privacy policies analyzed are highly complex, text-heavy, and almost exclusively in English despite the games being designed in Turkish, thereby creating significant accessibility barriers. The use of legal or technical terminology without simplification, and the absence of visual or interactive explanations make these policies unsuitable for children. According to the Ateşman Readability Index, the texts are only comprehensible at an undergraduate or postgraduate reading level, failing to meet the developmental needs of the target audience. While some games reference regulations like COPPA and GDPR, none provide fully functional parental consent mechanisms or child-specific privacy policies, and none acknowledge Türkiye's KVKK, revealing a major compliance gap within the local legal context.

These findings align with studies such as Livingstone and Third (2017), which emphasize the challenges in aligning digital environments with children's rights and developmental needs. It also supports the research conducted by Maqsood and Chiasson (2021), who concluded that children, that is, end users, are more careful when digital games are designed in accordance with digital literacy and privacy principles for children. However, this study differs from prior literature by integrating multiple perspectives including legal, linguistic, and design-based evaluations into a unified analysis model. The revised framework, adapted from Sas, Denoo, and Mühleberg (2023) and tailored for the Turkish context, provides an original contribution by incorporating KVKK-based evaluation and readability scoring, offering a multi-dimensional tool for analyzing children's digital rights in mobile games.

From a practical perspective, the study reveals a clear need for integrating digital game literacy into broader media literacy programs, targeting not only children but also parents and educators. The absence of meaningful parental consent mechanisms and the disconnection between app store claims and in-game practices show that current teacher approval systems are insufficient for ensuring data protection. This supports Bennett's (2009) argument that personal data protection is a democratic responsibility that must be enforced at the state level.

The study also calls for a revision of regulatory enforcement, particularly in

the Turkish context, where the current legal framework lacks child-specific provisions. Echoing recent suggestions by Tanışık and Bal (2024), there is a pressing need to enhance public awareness of data rights under KVKK and to introduce binding requirements for child-friendly data policies in digital games.

Despite its contributions, the study has several limitations. It only examines free games available on the Google Play Store, excluding paid games, Apple's App Store, or independent developers. Future research should address these limitations by incorporating user-based studies (e.g., surveys or focus groups) and by conducting comparative analyses across different platforms and countries. In addition, the legal and practical implications of the absence of child-specific provisions under the KVKK merit a dedicated line of inquiry, especially as children increasingly become data subjects in the digital economy.

In conclusion, the study highlights the gap between regulatory ideals and practical implementations in the digital game ecosystem for children. By proposing a multi-layered evaluation model and advocating for updated legal standards and educational policies, it offers both academic and policy-level contributions to the fields of media literacy, child rights, and digital governance.

Çıkar Çatışması Beyanı

Makale yazarı herhangi bir çıkar çatışması olmadığını beyan etmiştir.

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APPENDIX-1: Coding Table

Games Title	LEGO DUPLO Peppa Pig	Sago Mini World	12 Locks 2	Hot Wheels Unlimited	Masha and The Bear: Pizzeria	Marvel HQ: Kids Super Hero Fun	LEGO Tower	LEGO Duplo: Marvel	Gumball's Amazing Party Game
Number of Downloads	5M+	10M+	50M+	50M+	5M+	10M+	10M+	10M+	10M+
Country of Publisher's Establishment	Ireland	Canada	Latvia	Canada	Estonia	Ireland	United States	Ireland	England
Children Approval	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Google Play Age Rating	5 Years old	5 Years old	9-12 Years old	9-12 Years old	All age groups	5 Years old and 6-8 years old	6-8 Years old and 9-12 years old	5 Years old	6-8 Years old and 9-12 years old
Commitment to Comply with Google Play Family Policy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
COPPA	Yes	Yes	No	No	Yes	Yes	Yes	Yes	No
GDPR	No	Yes	No	No	No	No	Yes	No	No
KVKK	No	No	No	No	No	No	No	No	No

PEGI Categorisation	PEGI 3	PEGI 3	PEGI 3	PEGI 3	PEGI 3	PEGI 3	PEGI 3	PEGI 3	PEGI 3
Type of Collected Data	Location, app information, performance, and device or other identifiers	Location, device or other identifiers	Financial information, app activity, device and other identifiers	Not collected	Location, app activity, app information and performance, and device or other identities	Personal information, application information and performance	Location, app activity app information and performance, device or other identities	Application information and performance and application activity	
Sharing of Data with Third Parties	No	Yes: Personal information and device or other identifiers	No	No	No	No	No	No	
Consent to Delete Collected Data	No	Yes	No	No	No	Yes	No	No	
Privacy Policy	General privacy policy	General privacy policy	General privacy policy	General privacy policy	General privacy policy	General privacy policy	General privacy policy	General privacy policy	
The Atesman Readability Index	Postgraduate degree	Bachelor's degree	Bachelor's degree	Bachelor's degree	Postgraduate degree	Bachelor's degree	Postgraduate degree	Postgraduate degree	
Data Encryption	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	
Parental Consent to Privacy Policies	No	No	No	No	No	No	No	No	

Privacy Policy on Use of Images for Children	No	No	No	No	No	No	No	No	No	No
Use of Visuals for Children in the Data Collection Policy	No	No	No	No	No	No	No	No	No	No
Informing About Privacy Policy After Downloading a Game	No	No	A separate link provided.	A separate link provided. Privacy information in English	A separate link provided. Privacy information in English	A separate link provided. Privacy information in English	A separate link provided. Privacy information in English	A separate link provided. Privacy information in English	A separate link provided. Privacy information in English	A separate link provided. Privacy information in Turkish
Approval Button to Privacy Policy After Downloading the Game	No	No	A separate link provided	No	No	A separate link provided. Privacy information in English	No	No	No	A separate link provided. Privacy information in Turkish
Parental Approval	Yes	Yes	Yes	No	No	No	No	No	Yes	Yes

Which personal data do games request access to?	Does not write	Camera permission, no notification about permissions requested when downloading	Does not write	Identity information, financial information, payment information, technical data, usage data, marketing and advertising data	Identity information, financial information, payment information, technical data, usage data, marketing and advertising data	Identity information, home address, photo or video, voice recording
Whether Privacy Policies Are Clearly Written in-Game (Does It Redirect to a Separate Website or App?)	Does not write	A separate link provided	A separate link provided. The relevant text is in English.	A separate link provided. The relevant text is in English.	A separate link provided. The relevant text is in English.	A separate link provided. The relevant text is in Turkish.

Information on Sharing Data with Third Parties After the Game is Downloaded	Same as Google Play Store	Same as Google Play Store	Although there is information that it is not shared on the Google Play Store, there is information that it can be shared within the game. It is guaranteed that USA standards are met.	Although there is information that it is not shared on the Google Play Store, there is information that it can be shared within the game. It is guaranteed that EU standards are met.	Although there is information that it is not shared on the Google Play Store, there is information that it can be shared within the game. It is guaranteed that EU standards are met.	Although there is information that it is not shared on the Google Play Store, there is information that it can be shared within the game. It is guaranteed that EU standards are met.	Yes
Are there any in-game purchase instructions?	Yes	Yes	Does not write	Yes	Yes	No	Yes