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Location-Based Games as a Form of City Promotion: The Case Study of Pokémon GO and the Cracow Old Town

Abstract

Objective: Location-based games have been very popular for years, and the links they contain to places in the real world may raise questions about the quality of the content presented. The aim of the article is to present the possibilities of location-based games in the promotion of cities, using the example of the Pokémon GO game in the Old Town area of Cracow.

Research Design & Methods: The research article is based on a literature review and content analysis of the Pokémon GO game in the Old Town of Cracow. As part of the study, players were asked to rate the portals in the mentioned game in the study area.

Findings: There are over 250 portals of various characteristics in the Old Town of Cracow. Most of them, according to the respondents, are of high value and allow one to get to know the city better by playing Pokémon GO.

Implications / Recommendations: This study may be important for city authorities who would like to better promote their areas that are often visited by players.

Contribution / Value Added: The quality of POIs in the Old Town area of Cracow is quite high. The portals around the Wawel Royal Castle were particularly highly rated. Moreover, in the opinion of the respondents, portals presenting information boards and commemorative plaques are the most carefully prepared.

Keywords: tourism, location-based games, city promotion

Article classification: research article

JEL classification: L830

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Introduction

Pokémon GO as a location-based game

Location-based games are a relatively young genre of games that involve adapting content to the user's location. They began to appear at the beginning of the 21st century, and the game *Botfighters* (2000) is considered one of the pioneers of this genre (de Souza a Silva, 2009). The greatest development of location-based games began in 2016. That is when the *Pokémon GO* game debuted. Undoubtedly, an important factor resulting in the creation of location-based games was technological development, particularly the development of geolocation technologies. Owing to it, digital fun could be transferred to the real world, which opened new opportunities for players and creators (Nicklas et al., 2001).

By definition, location-based games are programmes and applications that use geolocation technologies, usually through the GPS module, although they may, depending on the need, use other sets of satellites such as GLONASS or Galileo. By determining the player's location, they provide access to information such as terrain, weather, etc., based on which gameplay elements are created. These types of programmes are characterised by high requirements regarding connectivity, which is why they are usually released for smartphones (Weber, 2016).

However, the above-mentioned aspects are not the only factors that distinguish location-based games from games in the classical sense. Progressing in location-based games is not possible without moving around, because players are rewarded for, for example, kilometres travelled, visiting a specific country or city, or even staying in a given place long enough. A common complaint about classic games was the amount of time that the users spent sitting in front of the screen or monitor. Location-based games require real-world movement, which can impact physical health. Moreover, they open up opportunities to improve mental health by spending time with people with similar interests and making new friends (Wang, 2021). This innovative approach to the seemingly closed and tight gaming market has contributed to the dynamic development of location-based games and the creation of new titles.

Location-based games use the POI (Points of Interest) system. It is popular in applications and programmes based on the user's location, in which it is used to recommend, for example, restaurants or museums. Examples include the Yelp and Foursquare applications, which, by recording users' whereabouts, are able to analyse previous behaviour and, based on it, suggest visiting subsequent, similar destinations (Qin et al., 2018).

The POI system is one of the main reference points for the player on the virtual map. Points of interest in the real world are reflected in the mobile world, owing to which the player can better familiarise themselves with the area where they spend free time. This system, of course, has its drawbacks, and they are especially felt by players in rural areas, because there are not so many interesting points there, and, as a result, the game offers a much less dynamic experience than, for example, in the city centre (Laato et al., 2021).

The most popular location-based games include: *Pokémon GO*, *Ingress Prime*, *Geocaching*, *Pikmin Bloom*, *Monster Hunters Now*, as well as games already withdrawn, such as *Harry Potter: Wizards Unite* and *The Witcher: Monster Slayer*. Due to the greatest popularity of the first of the mentioned games, this article will concern specifically it.

Games featuring Pokémon first appeared in the 1990s and involved catching, training, and fighting with virtual creatures. Over time, the franchise developed and films, TV series, and

Pokémon cards were created. In 2016, *Pokémon GO* debuted. It is a location-based game that allows players to catch these creatures in different destinations (Ashar et al., 2020). It is one of the most popular location-based games today (Moscoso et al., 2022).

According to data from Google Play (as of May 2024), *Pokémon GO* has over 100 million downloads. Its average rating from 15.5 million reviews is 4.0. Hundreds of thousands of players engage in events around the world. There are over 2,500 such people in Cracow alone (the data comes from the Niantic Campfire application). Moreover, global events organised annually for *Pokémon GO* players attract many fans of this application. In 2023, three GO Fest events were held in Osaka, London, and New York, respectively. Nearly 200,000 people took part in them. According to reports prepared for Niantic, these events generated 323 million USD for local economies (Niantic, 2023).

As already mentioned, in location-based games, the POI system is used for orientation in the field. This system has been effectively expanded in Niantic's games. The first one, *Ingress Prime*, allowed players to submit their own points, which could later be presented in the virtual world after verification. In this way, a POI database was created, from which other titles published by this studio were derived. *Pokémon GO* uses POI in two ways. These portals are called Pokéstops and Gyms in the game. The first ones are the most common and allow players to obtain useful items as well as install Pokémon lures. The second group of locations is much rarer and allows players to fight and take over territory, owing to which they have the opportunity to obtain in-game currency called Pokécoins (Juhász & Hochmair, 2017). This virtual infrastructure uses so-called S2 cells, into which the globe is divided. They have different levels, and from the perspective of *Pokémon GO*, the most important is level 17, because there can be a maximum of one portal in such an area. Therefore, in culturally rich places with a high density of interesting objects, there is often a situation where they do not have a virtual equivalent, because they would violate the rules of portals. The POI database has been gradually developed in recent years, as it became possible to report portals via *Pokémon GO*. The centre of the proposed POI is the Niantic Wayfarer, a website that collects all reports and corrections submitted by the player (Laato & Tregel, 2023).

In *Pokémon GO*, portals have a photo, name, and, above all, location. Moreover, they can be enriched with a description or additional photos. This is important, because users have the opportunity to read this information while playing, which may be an additional attraction for them, for example when travelling (Woods, 2020).

The main tourist attractions of the Cracow's Old Town

Cracow is a particularly important city from the perspective of Polish history, not only as the former capital of the country, but also as a cultural centre. Thousands of tourists are attracted by its architectural beauty, tourist attractions, monuments, and places closely related to history. An area particularly rich in this type of places is the oldest district, the Old Town, whose current shape was formed in the 13th century (Kraków, 2024). Importantly, the Old Town in Cracow was included in the UNESCO World Heritage List in 1978, and in 1994 it was recognised as one of the National Historical Monuments (Golonka-Czajkowska, 2017).

The Old Town in Cracow is an attractive tourist area. The most recognisable historic buildings there include (Triverna, 2023):

- the Cloth Hall – former shopping spaces where one can still buy souvenirs and handicrafts. On the first floor of the building, there is the Gallery of the 19th-century Polish Art. In the basement,

there is an entrance to the Main Square Underground, which is a branch of the Historical Museum of the City of Cracow;
- St. Mary's Basilica, a Gothic temple dedicated to the Assumption of the Blessed Virgin Mary, which houses the famous 15th-century altar of Veit Stoss. Moreover, the bugle call can be heard from St. Mary's Tower every hour;
- the Florian's Gate with the city's defensive walls and the Barbican, the northernmost part of the Old Town fortifications;
- the Wawel Royal Castle, i.e. the residence of the Kings of Poland until the 17th century. It has been a museum since 1930. It is worth adding that it also serves as a mausoleum of kings and distinguished Poles. In addition to the crypts, there is also the Crown Treasury, the Armory, and the Royal Chambers. A crucial element of the identity of this place is the Dragon's Den with the monument of the Wawel Dragon, which refers to a local legend;
- Collegium Maius of the Jagiellonian University, the oldest part of the former Cracow Academy. It was established in the 15th century. Currently, it serves as a museum, where the exhibits refer primarily to the history of the University.

In addition, there are numerous churches and religious buildings, places belonging to universities, richly-decorated tenement houses, sculptures, fountains, and museums. Moreover, the entire area of Cracow's Old Town is surrounded by green areas in the form of the Planty Park.

Location-based games as one of the contemporary forms of city marketing

The concept of place (city) marketing has developed significantly owing to the work of Kotler and Levy in the 1970s, although it had already been known in the 19th century, when cities made various efforts to attract as many tourists as possible. City marketing has undergone a transformation over the years from the introduction of high-intensity advertising tools to the creation of place brands. In order for promotional activities to achieve the intended result, it is extremely important to engage various groups of stakeholders. On the one hand, the active participation of such people strengthens their sense of belonging, owing to which they develop enthusiasm for being the ambassadors of a given place. On the other hand, place branding can cause negative feelings, i.e. hostility or scepticism. Therefore, providing stakeholders with reliable information as well as incorporating their ideas and postulates is an extremely important aspect of city marketing (Khairat & Marso, 2023).

Cities and places must undertake city marketing activities to strengthen and/or increase their competitive position. These strategies concern the assets of a given area, i.e. what it can offer to residents, visitors, tourists, etc. Increasing the attractiveness of a city as a place to do business, live permanently, or simply visit contributes to building its competitive position compared to others (Boisen, 2007).

Nowadays, modern technologies can help build the best possible relationships with stakeholders. Dynamic changes in the environment, globalisation, and the development of mobile applications force decision-makers to redefine the structure of communication tools. On the one hand, these innovative solutions bring the real world closer to recipients, and on the other hand, they enrich it with virtual elements. Modern technologies allow the recipients to access many sources of information provided in real time. What is more, they can voluntarily pass on this message to other interested parties, thereby co-creating these messages. For this reason, mobility, interactivity, and feedback have become the basis of modern marketing communication (Pisula et al., 2023).

The three above-mentioned features are also an important part of location-based games. These games are primarily designed for mobile platforms, because they often require access to the Internet, and their operation is based on geolocation technologies. Location-based games are also interactive in a much broader sense than classic games. Interaction does not only occur between the player and the device, but also the aspect of the environment (place) is added, with which both the user and the game can interact (Weber, 2016). Feedback, on the basis of which changes are made, is also extremely important. It can consist in influencing the decisions of developers, e.g. regarding the introduction of certain improvements or ‚quality of life' updates. On the other hand, location-based games, e.g. *Pokémon GO*, are based on the POI system, which is largely created and rated by players. These objects can significantly contribute to the promotion of individual places (monuments, restaurants), larger areas (city parks, museums), and even entire cities among players (Laato et al., 2021).

Literature review

Previous publications on location-based games refer to various aspects of this phenomenon. A significant part of scientific works discuss technological issues, e.g. relating to the use of AR (augmented reality) technology (Laine, 2018). There are also publications relating to the design and implementation of place-based games (Veloso et al., 2020). When it comes to articles showing the relationship between location-based games and tourism, many of them merely indicate the existence of such a phenomenon (Tussyadiah, 2012). A broader perspective is provided by publications presenting territorially-based games as a form of a destination guide (Paul, 2021).

Publications related to the *Pokémon GO* game cover various issues. Most concern the game's promotion of physical activity (Liu & Lingmann-Zielinska, 2017; Althoff et al., 2016) and psychological aspects (Paasovaara et al., 2017; Lawler-Sagarin et al., 2023). Some articles examine the motivation to play the game (Broom et al., 2019; Marquet et al., 2017) and in-app purchasing behaviour (Senra & Vieira, 2018; Rasche et al., 2017). The authors also deal with game analysis (Sablatura & Karabiyik, 2017) and the issues of learning through playing (Majgaard & Larsen, 2017; Srinivasan et al., 2019). Few articles present various aspects related to *Pokémon GO* from the perspective of specific cities, but these which do are related to Melbourne (Wang et al., 2018) or Rio de Janeiro and Nairobi (Silva et al., 2021; Silva et al., 2023), as well as countries such as Brazil (De Souza-Leao & Moura, 2018) or Peru (Mejia et al., 2019).

Research methodology

The aim of the research was to evaluate POI in the Cracow Old Town based on various criteria. The following research questions were asked:

- RQ1: How do players rate the portals located in Cracow's Old Town?
- RQ2: What types of portals are rated the highest by players?
- RQ3: In which part of the Old Town are the highest-rated portals located?

For the purposes of this article, all *Pokémon GO* portals in two Old Town areas of Cracow were analysed. The study consisted of four parts. The first one was an analysis of the game content in order to identify all Pokéstops and Gyms located in the Old Town area. The second stage was to establish the evaluation criteria and their weights. In addition, all portals were divided into themes. Also, the analysed area was divided into seven smaller parts, and each of them had

a characteristic tourist attraction. The third stage was attended by three *Pokémon GO* players from Cracow, who are at least level 45 in the game and have at least a silver Wayfinder Badge (750 correctly rated portals). They assessed all portals according to the established criteria. The last stage involved analysing the collected data using descriptive statistics. The entire study took place in April and May 2024.

The analysis of the game content showed that there are 255 portals in the examined area, of which 240 are Pokéstops and 15 are Gyms. After distinguishing all POI, questionnaires were prepared for the respondents, in which they were asked to evaluate the portals in terms of four criteria on a scale from 1 to 5. The most important criterion was the location (weight 0.35), because it is a virtual reference point for the player's location. The respondents could rate the location of portals based on the following degrees:

- 1 – Unidentified point.
- 2 – Identified point located outside the Old Town district.
- 3 – Identified point more than 10 metres away.
- 4 – Identified point 3 to 10 metres away.
- 5 – Identified point within 3 metres.

The title criterion (weight 0.3) is also important, because it allows players to identify the nature of the object. The players could rate them based on the following ratings:

- 1 – No title.
- 2 – Incomprehensible title.
- 3 – Understandable but not detailed title.
- 4 – Slightly expanded title containing some key information.
- 5 – Detailed title containing key information.

The third assessed feature of POI was description (weight 0.2). It may provide additional trivia for players and be a source of other useful information. The description of the portals was assessed based on the following criteria:

- 1 – No description.
- 2 – Incomprehensible description.
- 3 – Description same as title.
- 4 – Not very detailed description.
- 5 – Detailed description.

The last assessed feature was the photo (weight 0.15). It allows players to visually identify portals. The following degrees were distinguished:

- 1 – No photo.
- 2 – Blurred photo(s).
- 3 – Exactly 1 clear photo.
- 4 – Exactly 2 clear photos.
- 5 – 3 or more clear photos.

Due to the complexity of the research (the need to evaluate 255 objects according to 4 criteria), three players took part in the study. They had been previously verified in terms of their level in the game (at least 45) and their Wayfinder Badge (at least silver), which shows how many portals they have correctly rated through the Niantic Wayfarer programme. The players received evaluation sheets and completed them within about a week. The last part of the study was the analysis of the collected data, which used the weighted average method and frequency distribution.

Discussion

After identifying all POI in the Old Town area, they were classified according to type (see Figure 1). The largest group of portals is commemorative plaques (a little over 27%) and wall decorations (almost 20%). Larger and more recognisable monuments such as monuments, sculptures, and fountains constitute less than 16%, while historic buildings and museums constitute almost 12% of POI in the analysed area. Less numerous groups of portals include churches and religious buildings (approx. 7%), restaurants and hotels (approx. 4%), and recreational facilities (approx. 2%). The smallest group of portals is sponsored facilities (2%), which are created in player meeting places during events organised globally in the game, i.e. Community Days or Raid Hours. In these places, *Pokémon GO* fans can also meet Community Ambassadors, who often award the participants with various prizes. Sponsored portals also have a promotional function. They are currently advertising the GO Fest event, which is scheduled for July 2024 in Madrid.

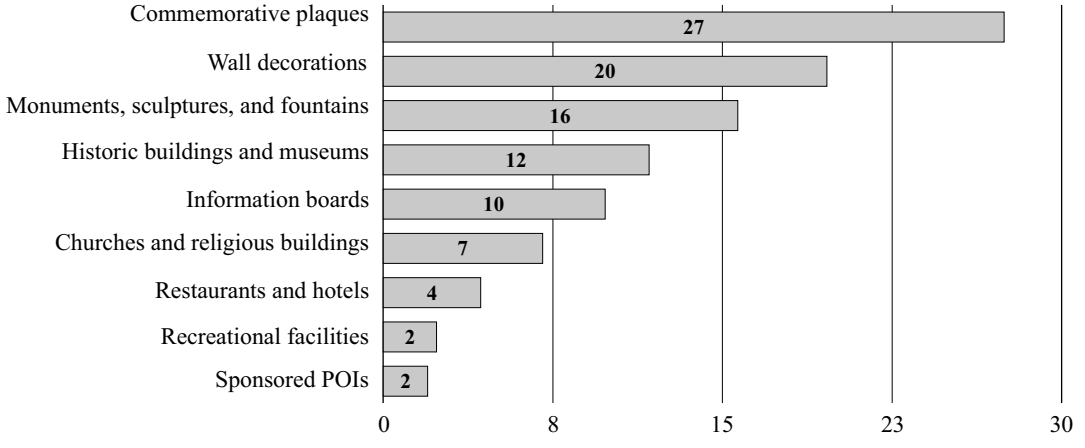

Figure 1. The thematic structure of POIs in the Cracow Old Town [in %]

Source: Own elaboration.

As mentioned, the Old Town has numerous tourist attractions, so an important element of the study was its division into smaller parts with certain characteristic points (see Figure 2).

Thus, 7 areas have been distinguished (A–G). They are separated by the following streets:

A – the north-eastern part of the Old Town between Szpitalna Street and Mikołajska Street; the main attraction here is The Juliusz Słowacki Theatre;

B – the northern part of the Old Town between Szpitalna Street, Sławkowska Street, and the Main Market Square; the biggest attractions in this area are the Barbican and the Florian's Gate;

C – the north-western part of the Old Town, separated by Sławkowska Street, the Main Market Square, and Wiślna Street; Collegium Maius is considered to be the most important attraction here;

D – the central part of the Old Town, separated in the south by Franciszkańska Street, in the east by Wiślna Street and the Main Market Square, and in the north by the Main Market Square and Mikołajska Street; the most important attractions here are the Cloth Hall and St. Mary's Basilica;

E – the southwestern part of the Old Town, the west of Grodzka Street and bordering on Podzamcze Street in the south; the biggest attraction of this area is the Franciscan Basilica and the Archaeological Museum;

F – the southeastern part of the Old Town, the east of Grodzka Street; the main attraction in this area is the Baroque Church of Saint Peter and Paul;

G – the southernmost part is separated by Podzamcze Street, Bernardyńska Street, and the Vistula River; the main attraction here is the Wawel Royal Castle.

The respondents assessed all portals in the Old Town area according to four criteria. A weighted average was derived from these ratings, which made it possible to determine the quality of portals in selected parts of the Old Town (see Figure 3).

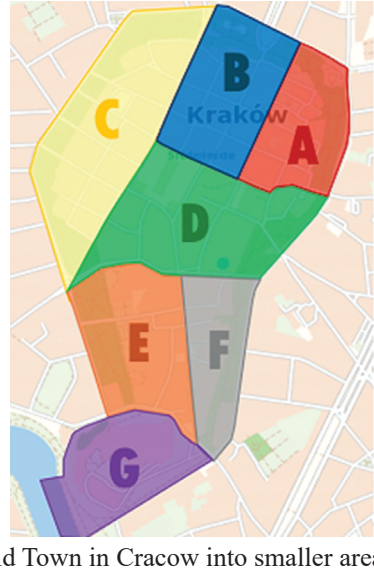

Figure 2. The division of the Old Town in Cracow into smaller areas

Source: Own elaboration.

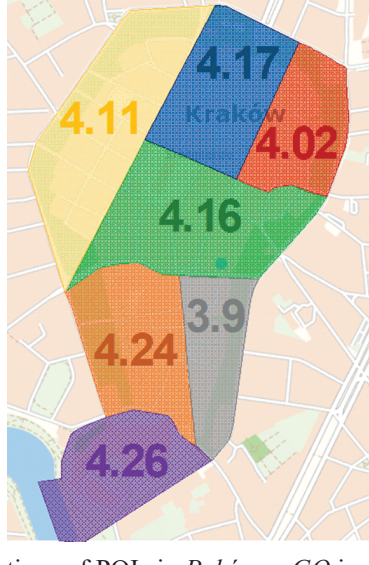

Figure 3. The average quality ratings of POIs in *Pokémon GO* in selected parts of the Old Town in Cracow

Source: Own elaboration.

Part F received the lowest average rating (3.9). This was due to the presence of portals with illegible names (including Latin and French) and low-quality photos. Part A was the second worst rated area (average 4.02). The main complaints concerned recreational portals with poorly chosen names and blurry photos.

Area G was rated the highest by players (average 4.26). Both the monuments located on the Wawel Hill and the RMF Star Trail, which is located along the Vistula River, received high marks. Area E received very similar average scores (4.24). Such a high rating resulted primarily from the excellent quality of portals in the form of information boards on benches in the Planty area.

The last part of the analysis is the presentation of average ratings depending on the topic of the portal (see Figure 4).

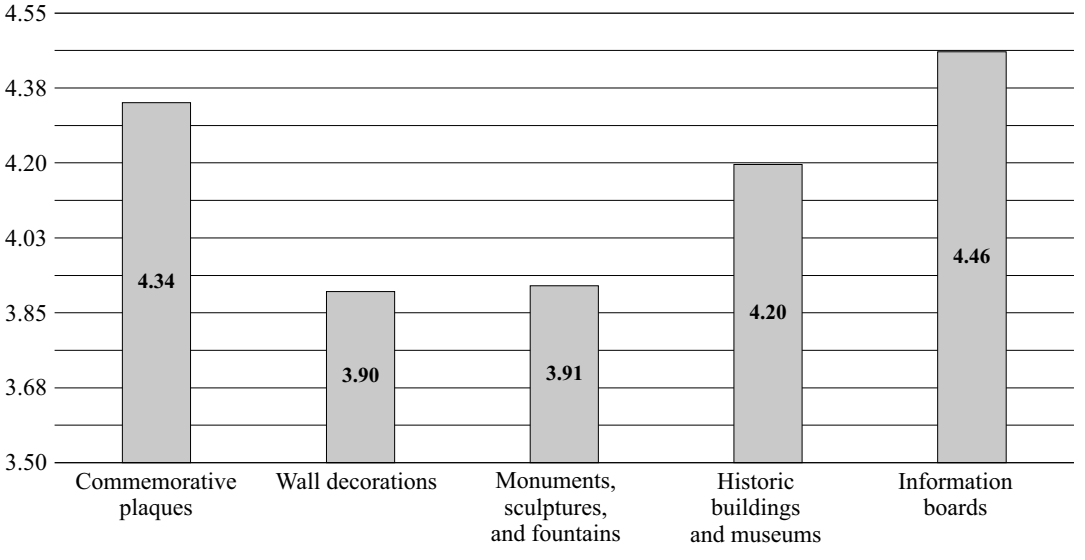

Figure 4. The average ratings of POIs in Cracow's Old Town depending on the type of portal

Source: Own elaboration.

The highest scores are given to information boards (average 4.46) and commemorative boards (4.34). This is due to easy access to the information written on them, which allows portal creators to present these POI in an interesting way. Wall decorations (average 3.9) as well as monuments, sculptures, and fountains (average 3.91) were rated much lower. This was due to illegible names, often in foreign languages, and blurry photos. Moreover, in some cases, the difference between the real and virtual location of the portals was several or a dozen metres, which contributed to lower ratings.

Conclusions

To sum up, the quality of portals in the *Pokémon GO* game in the Old Town area of Cracow is highly rated by players. The participants appreciated, above all, the high consistency of POI locations in the game compared to their real location. There were only few discrepancies in this aspect. The names of most portals were also correct and clearly indicated what type of object the player was dealing with. Photos showing portals in the game were mostly legible, and

in some cases their number even exceeded 20. The biggest drawback of the analysed POI were the descriptions that were missing in the case of a significant number of Pokéstops and Gyms.

Interesting conclusions are drawn from the average ratings according to the thematic classification of portals. They clearly indicate that the most recognisable POI, i.e. historic buildings, museums, monuments, and fountains are of lower quality than less characteristic objects, i.e. information boards and commemorative plaques. Therefore, it can be assumed that visiting the Old Town in Cracow using *Pokémon GO* will be more interesting for people who want to get to know little-recognised and hidden „gems" rather than the most famous monuments of this area.

Most portals are described in Polish, and only few have both Polish and English descriptions. From the perspective of foreign tourist players, this is an inconvenience that makes it impossible to get to know POI through *Pokémon GO*. If large global events are organised in the future, e.g. GO Fest or City Safari, it is in the interest of the local people to be able to identify portals also in English, which would arouse the interest among foreign tourists.

Introducing corrections and new portals by players is a long and demanding process. POI in the Old Town have many positive features, but there is still room for their development, which may have a positive impact on the recognition of various types of objects by players.

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