education sciences

MDPI

Article

Beyond Entertainment: Analyzing Multiperspectivity in Digital Strategy Games for Educational Purposes

Alexandra Budke [1,*], André Czauderna [2], Diana Gebele [3] and Alexandra L. Zepter [3]

[1] Institute for Geography Education, University of Cologne, 50923 Köln, Germany
[2] Cologne Game Lab, TH Cologne, 51063 Köln, Germany; ac@colognegamelab.de
[3] Institute for German Language, University of Cologne, 50923 Köln, Germany; diana.gebele@uni-koeln.de (D.G.); azepter@uni-koeln.de (A.L.Z.)
* Correspondence: alexandra.budke@uni-koeln.de

Abstract: Commercial strategy games are a medium for addressing and disseminating socially controversial issues and influencing social discourse. In order to assess their didactic usefulness and suitability as educational media, this article examines the extent to which they integrate multiperspectivity into their game design. In principle, the ability to adopt perspectives is essential for understanding other human beings, their views, motives, and interests, and is therefore also an important educational objective at school. If strategy games integrate multiperspectivity, they could eventually also be used as a didactic tool to develop perspective-taking skills and to deal with controversial social issues, such as climate change or urban planning, in the classroom. In order to address this research gap and assess the potential of digital strategy games for teaching multiple perspectives in the classroom, it is first necessary to examine the extent to which and the forms in which strategy games integrate multiple perspectives. For this purpose, seventeen successful titles are examined through an empirical game analysis. It is shown that in all of them, different stakeholders and their perspectives are integrated into the games. However, the number of perspectives, the scope of the perspectives presented, and their controversial nature, as well as the language design vary considerably.

Keywords: multiperspectivity; digital games; education

Received: 7 January 2025
Revised: 9 April 2025
Accepted: 10 April 2025
Published: 12 April 2025

Citation: Budke, A., Czauderna, A., Gebele, D., & Zepter, A. L. (2025). Beyond Entertainment: Analyzing Multiperspectivity in Digital Strategy Games for Educational Purposes. *Education Sciences*, *15*(4), 479. https://doi.org/10.3390/educsci15040479

1. Introduction

To educate responsible citizens, schools address key social issues and discuss them in class, often using the principle of multiperspectivity. This helps avoid one-sided views and promotes a deeper understanding by considering various perspectives (Duncker, 2005). To recognize and express these perspectives in texts and speech, students need specific linguistic skills, which must also be taught in school (Gogolin et al., 2013; Feilke, 2014; Gebele & Zepter, 2016). Multiperspectivity is essential forempowering citizens, as it encourages critical thinking, empathy for others' views, and a better understanding of societal issues, solutions, and cultural diversity (Rhode-Jüchtern, 1995). Multiperspectivity is particularly necessary when dealing with political conflicts in the classroom in order to promote the learners' understanding of the different motives of the stakeholders and to support their ability to empathise (Yakter & Tessler, 2018). Multiperspectivity is therefore an important component of peace education.

The question of which media can best be used to convey multiperspectivity in the classroom arises for didacticians and teachers. Various studies have shown that the classic textbook and the teaching material published in teachers' magazines have shortcomings

in this area, as they mainly contain didacticized author texts and hardly any authentic statements from the perspectives of different social and cultural groups, which also entails the danger of conveying stereotypes (Lütje & Budke, 2021; Vasiljuk & Budke, 2021b; Stöber, 2001). An examination of textbooks showed that although spatial conflicts are addressed, there is rarely an in-depth multiperspective discussion that goes beyond a list of pros and cons without reference to the stakeholders and their precise perspectives (Stöber, 2001; Kuckuck, 2014).

In this context, digital games offer promising didactic opportunities, as they not only increase students' motivation but also provide unique learning mechanics (Gee, 2007). Therefore, proponents of digital game-based learning suggest the use of serious games, which are intentionally designed for educational purposes, as well as entertainment games, which students play in their free time.

In addition to their entertainment value, digital games have the advantage that they often address the "wicked" (Wilson, 2021) and complex social problems. An analysis by Lux and Budke (2020a) shows that commercially successful strategy games address current social issues, such as climate change, migration, (sustainable) urban and spatial development, resource use, and conflict. The games are linked to the social discourse on these highly controversial issues and represent a medium in which a wide variety of solutions can be developed and safely tested by players. The games show systemic connections (Lux & Budke, 2020b), and students can practise dynamic decision-making (Czauderna & Budke, 2020). In addition to the proven benefits of learning through digital games, there is also a risk that, due to a lack of reflection, the content of the games is uncritically accepted as correct and unconscious misconceptions are conveyed (Lux & Budke, 2023; Baßeng & Budke, 2024).

In order to further assess the potential educational benefits of these digital games and their suitability as teaching media, it is also necessary to analyse the extent to which they provide multiperspective representations, or whether students may even be influenced by mono-perspective representations and impaired in forming opinions and understanding pluralistic social discourse. Now, previous empirical studies have shown that digital games can facilitate greater role-taking and, thus, empathy and willingness to help by have players take on the role of someone else (Peng et al., 2010).

To the best of our knowledge, no systematic studies have been conducted on the role of stakeholders and multiple perspectives in strategy and management games. There is also a lack of secure knowledge about how multiperspectivity is implemented linguistically in such games. Multiperspectivity in the context of social problems has only been studied in two serious games (De Angeli et al., 2018) and not in the context of the many more widespread commercial games. We are particularly interested in the genre of strategy or management games that facilitate dynamic decision making by requiring players to take on the role of decision makers, manage conflicting goals, and engage in continuous decision making, while providing structured feedback and modifying time to enhance learning processes (Czauderna & Budke, 2020).

The following main research question therefore arises:

To what extent do commercially successful strategy games dealing with social challenges integrate multiperspectivity into the game design?

The following three sub-questions can be formulated:

(1) What types of stakeholders are present in the games under study?
(2) How do the stakeholders communicate their perspectives in the games and in which way is multiperspectivity expressed linguistically?
(3) What conflicts arise from the different perspectives in the game and what solutions does the game design offer?

To answer these questions, a qualitative analysis of 17 commercial strategy games was carried out. On the basis of the results, it can be decided whether the very important competence of changing perspectives in an educational context can be taught through the games and whether integrating the games into lessons is potentially useful. On this basis, further studies can investigate the precise learning effects of teaching with these games on students.

In the following sections, the state of research on multiperspectivity from a didactic and media pedagogical perspective is presented. In addition, criteria for identifying multiperspectivity in digital games are derived theoretically and applied empirically in a game analysis of seventeen current titles to answer the research question. The results are discussed, and conclusions are drawn for the pedagogical use of digital games in multiperspective teaching.

2. The State of Research

In the following section, the current state of research in pedagogy and didactics on changing perspectives for educational purposes is presented. The most relevant publications from the didactics of the different teaching subjects are presented. In addition, media pedagogical approaches to the significance of role-playing in digital games are presented. Based on the interdisciplinary literature, we have developed our own conceptual model to capture the multiperspective characteristics of digital games, which also forms the basis of the empirical analysis.

2.1. Multiperspectivity and Learning

Multiperspectivity derives from the epistemologies of perspectivism. Nietzsche (Ataeian, 2013) described perspective as a point of view that helps to bring structure to a chaotic world and to simplify it. In doing so, people see their own perspective as the right one and find it difficult to accept other perspectives. Because of the human inability to adopt all perspectives simultaneously, a change of perspective is necessary to achieve mutual understanding. Building on Nietzsche's remarks, a change of perspective is therefore essential to understand the actions of stakeholders, to perceive social problems, to understand conflicts, and to develop solutions that as many social groups as possible can accept.

The development of the ability to adopt perspective is an important subject of cognitive psychology. Piaget (1975) already described the ability to change perspectives as a prerequisite for overcoming the child's egocentrism in order to take on the social perspectives of others. For Selman, social perspective-taking is "... not only the way in which one person's social or psychological knowledge of one person may be seen from the point of view of another, as does the concept of role assumption, but the developing understanding of how different points of view relate to and are related to and coordinated with each other" (Selman, 1984).

Multiperspectivity is an interdisciplinary didactic principle that is increasingly relevant in a world where global problems exist, and international understanding is needed to solve them (Duncker, 2005) and should therefore also be promoted in school settings. According to Duncker, "[i]t can then no longer be a question of presenting a single world view as the only correct and possible one and declaring it to be binding; rather, the argumentative game with perspectives and positions must be practised in schools and lessons from the very beginning and the ambiguity and relativity of viewpoints, which can be experienced again and again, must be made understandable" (Duncker, 1996).

When social issues are discussed in class from multiple perspectives, students can compare viewpoints, develop their own perspective, and better understand social discourse.

By analysing the origins of different perspectives, they learn that every truth is shaped by the observer's interpretation (Duncker, 2005). Multiperspectivity is particularly important for avoiding stereotypes, especially in intercultural learning, as it ensures that teaching does not reinforce simplistic views of other cultures (Stöber, 2001). Horn et al. (2024) emphasized the importance of transdisciplinary approaches, which involve collaboration between different disciplines and social stakeholders, incorporating their diverse perspectives to address complex issues. This principle is reflected in the didactics of many subjects, demonstrating its relevance for citizenship education.

In geography education, Rhode-Jüchtern (1995) highlighted the importance of shifting perspectives as a method for examining differences in viewpoints. He described this as a process of questioning that leads to recognition, judgment, and action. A competency structure model for perspective-taking includes six dimensions: awareness, comparison, analysis, deconstruction (including self-reflection), judgment (including evaluation), and meta-reflection (Vasiljuk & Budke, 2021b).

In political education, role-taking is essential for fostering democratic competence, as it enables individuals to understand others' perspectives and engage in peaceful conflict resolution, while also strengthening their own viewpoints (Reinhardt, 2004).

In history education, multiperspectivity is a central principle, with studies exploring how teachers implement it in their lessons (p. ex. Wansink et al., 2018) and how they can be supported in doing so (Elcheroth et al., 2019). Even in sports didactics, the ability to shift perspectives is recognized as valuable for fostering empathy and understanding (Krüger, 2012). Biology education also emphasizes the importance of perspective-taking in reflective judgment, helping students understand differing values and judgments, which is crucial for developing tolerance (Reitschert & Hößle, 2006). In language education, adopting others' perspectives is essential for effective communication. In writing, for instance, students need to anticipate their audience's knowledge, expectations, and interests to create coherent and relevant texts (Becker-Mrotzek et al., 2014). Feilke (2012, 2014) underscored the importance of learning linguistic patterns and text procedures that help students position arguments, justify, conclude, contrast, and incorporate others' perspectives. Perspectivisation is especially relevant in concessive argumentation, where opposing viewpoints are anticipated and refuted as part of a rhetorical strategy (Rezat, 2011).

Although multiperspectivity is a widely discussed interdisciplinary principle, its integration into teaching through digital games remains underexplored.

2.2. Multiperspectivity and Digital Games

From a game studies perspective, the use of digital games as didactic tools in formal education can be beneficial for several reasons. One of these reasons is that games expose players to multiple perspectives through the roles they assume and their interactions with other stakeholders, including non-player characters (NPCs). Many genres of digital games allow players to assume different roles and experience different perspectives, making them a useful tool for promoting psychological concepts, such as role- and perspective-taking. These concepts are highly valued in learning theory and didactics, as they are believed to facilitate empathy and understanding (Hoffman, 1987; Davis, 1994), which are central to game design (for the relevance of perspective-taking in the context of literary learning and developing empathy in general, see also (Spinner, 2006)).

In digital games, the process of role-playing often involves identification with the game's characters, which Cohen (2001) described as "an imaginative process invoked in response to characters represented in a mediated text" (Cohen, 2001).

This process can lead to perceptual, cognitive, emotional, and motivational outcomes (Cohen, 2001, p. 250), similar to other forms of media. In particular, viewing the game world

through the eyes of the character leads to a high level of immersion in the game (Denisova & Cairns, 2015). However, digital games have unique features, such as interactivity and active participation, which allow players to engage in the game and take on different roles, thus facilitating agency and a playful, active experience of other perspectives (Vorderer, 2000; Klimmt & Hartmann, 2006). This experience is enhanced by psychological states, such as competence need satisfaction (Ryan et al., 2006) and flow (J. Chen, 2007; Csikszentmihalyi, 1990), which are inherent to gameplay.

From the perspectives of both learning theory and media studies, the active role-taking coupled with role-play (Peng et al., 2010) found in games distinguishes them from other educational technologies and highlights their particular potential. Gee (2007), representing a sociocultural approach to learning theory, argued that games are powerful learning tools precisely because "playing a character" is at the core of their design and "playing a character" is essential to all kinds of learning. In a science classroom, learning works best if students think, act, and value like scientists. Games can show us how to get people to invest in new identities or roles, which can, in turn, become powerful motivators for new and deep learning in classrooms and workplaces.

Research on the effects of multiple perspectives in digital games is sparse. However, studies, such as the one by Peng et al. (2010) focusing on the narrative-based simulation game, Darfur is Dying, have shown that digital games can enhance role-taking, empathy, and a willingness to help more effectively than reading text or watching gameplay videos, as they immerse players in the experiences of others. According to Kampf and Nicolaidou (2024), studies utilizing social impact games on entrenched conflicts, like the Israeli–Palestinian issue (PeaceMaker) and the Cyprus conflict (Fact Finders), showed mixed results in fostering multiperspective viewpoints, particularly among individuals affiliated with one of the directly involved parties. While the Cyprus conflict game facilitated diverse perspectives among direct parties of the conflict (Nicolaidou et al., 2023), the Israeli–Palestinian game primarily affected third-party participants (Cuhadar & Kampf, 2014).

Furthermore, digital games provide perspectives extending beyond the player's role. This can occur, for instance, through direct interactions with non-player characters (such as simulated face-to-face or online conversations), or via receiving one too many messages within simulated social networking sites (like microblogging posts), or even through mass media channels (such as newspaper articles). However, there is a noticeable absence of research on these kinds of perspectives in games from an educational angle.

2.3. Conceptual Framework

Based on the presented interdisciplinary approaches from didactics and games studies, a model was developed by us and is introduced below, which represents relevant factors that determine the exact characteristics of multiperspectivity in digital games. This will serve as a conceptual basis for analysing the empirical data from the game analysis in order to determine the integration of multiperspectivity in game design.

The model of multiperspectivity in digital games (see Figure 1) distinguishes three levels that should be analysed separately and whose interplay determines the degree of multiperspectivity of the game. Since perspectives are linked to stakeholders (Vasiljuk & Budke, 2021a) and studies on multiperspectivity usually examine the perspectives of stakeholders (Voegeli & Finger, 2021; J.-L. Chen & Yeh, 2018), the first level, "number and types of stakeholders", should examine the number and type of stakeholders implemented in the digital game (see the first research question). An actor is characterised by certain preferences, abilities, and perceptions and is a social agent whose reference is a social group. In the context of digital games, these are fictional stakeholders who are important in the reality of the game world (Lux et al., 2021).

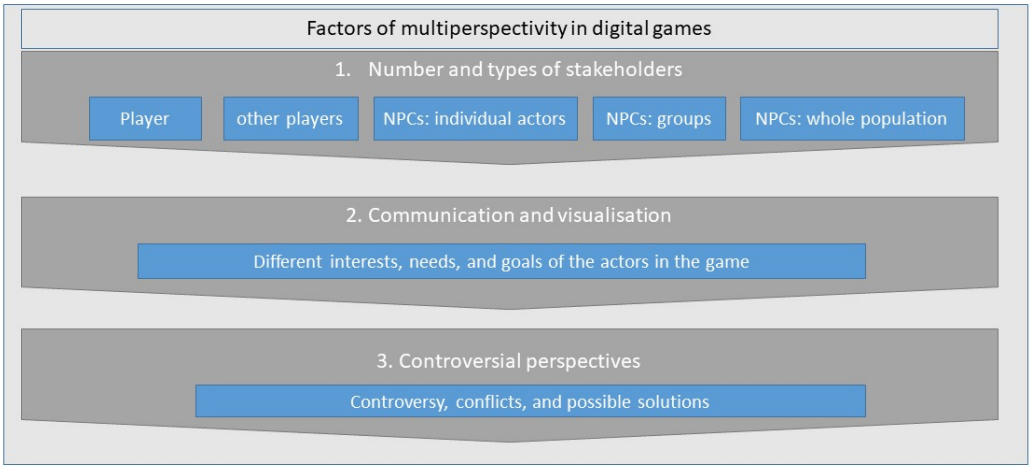

Figure 1. Model of multiperspectivity in digital games (own representation).

Basically, a distinction can be made between the player, who plays the game in a given role, other human players, and non-player characters (NPCs), who can appear as a whole population, as groups of the population, or as individual stakeholders. According to Vasiljuk and Budke's (2021a) theory of stakeholders, individual stakeholders can also be described as direct and individual, and population groups and the whole population as direct and complex stakeholders. One might assume that the greater the number and variety of stakeholders whose perspectives the player has to consider in the game, the greater the degree of multiperspectivity and the more the player's ability to change perspectives is enhanced.

Since perspectives depend on the stakeholders' communication, the second level, "communication and visualisation", should analyse the nature and extent of communication and the complexity of the stakeholders' representation of interests, needs, and goals (see the second research question). Here, the games can provide, for example, headlines, statistics, or individual statements by the stakeholders. In this context, it is also relevant whether the communication is written, visual, or auditive. This has an influence on the language skills (reading, listening, writing, speaking) required to decode it (Europarat, 2021). It can be assumed that the more extensive and complex the means of communicating perspectives in the game, the more challenging it is for the player to take these perspectives into account and the more likely it is that skills in analysing perspectives can be learnt.

If different perspectives on a problem are communicated and the players have different goals, this can lead to conflicts in the game. In this case, the player may no longer be able to satisfy the interests of all the players at the same time. According to Reuber (2001), the subjective construction of conflicts and the analysis of the stakeholders' interests and power should be in the foreground. Therefore, the third level, "controversial perspectives", should focus on the controversy of perspectives, conflicts, and possible solutions offered by the games (see the third research question). In this context, it can be assumed that the competence of the players to deal with controversial perspectives is particularly promoted by a game if many controversial perspectives of the stakeholders are present in the game, as well as a large number of possible solutions that can be chosen by the player.

3. Materials and Methods

3.1. Data Collection

A total of seventeen strategy and management games were the subject of this study. These games were selected on the basis of the following criteria: (1) the game should include at least one of the following topics that are central to informing about current controversial

social issues that are also relevant to the school curriculum, such as climate change, urban planning, migration, or resource conflicts; (2) the game has to be popular and/or critically acclaimed, as these types promise to be particularly motivating for students and to have a strong impact on students' knowledge and attitudes towards the above-mentioned topics; and (3) the game must be suitable for students aged between 10 and 18 years and, therefore, potentially able to be used in school classrooms.

For the second criterion, we analysed sales according to the website Steam Spy and/or Google Play; user ratings according to data from Apple, Google Play, Steam, and Metacritics; and game critics' reception according to the website Metacritics, which aggregates reviews. For the third criterion, we considered the games' age rating according to PEGI (Pan European Game Information), a European system for rating video game content.

During the selection process for the overall research project on the potential of digital games for education, we collected data from 109 digital games of different genres that could fulfil the criteria above. For the present study, we excluded those games that did not meet the criteria. In a previous study, the genre of strategy games was identified as particularly relevant for the integration of socially relevant topics into the gameplay, and games were identified that dealt particularly intensively with controversial topics (Lux & Budke, 2020a, 2020b).

The final selection for the present study was based not only on a quantitative analysis of the collected data but also a qualitative judgment by the authors. We excluded, for instance, those games that treat the social topics solely as a setting for gameplay without enabling a deeper engagement with the content. The selected games (in alphabetical order) are Age of Empires 2; Anno 1800; Anno 2070; Banished; Cities in Motion 2; Cities: Skylines (including the DLCs Green Cities and Natural Disasters); Civilization VI: Gathering Storm; Democracy 3; Fate of the World: Tipping Point (including the DLCs Migration and Denial); Frostpunk; Rise of Industry; Settlers 7 (History Edition); SimCity BuildIt; SimCity 4 Deluxe Edition; Transport Fever; Tropico 6; and Overcrowd: A Commute 'Em Up'.

3.2. Data Analysis

Methodologically, we chose a qualitative content analysis (Mayring, 2015) and comparatively examined the selected games based on predefined categories. We used our theoretical approach (Figure 1) to derive the analysis criteria. Further categories were derived from the material in the course of the analysis process (Table 1). Thus, the analysis includes a combination of deductive and inductive category development. The analysis of categories 1 and 2 is intended to answer sub-research question 1. Categories 3–6 relate to sub-research question 2, and categories 7 and 8 relate to the third sub-research question. After finalization of the category system, each game was played by us and a student assistant (who collected information on all the categories, made screenshots from important scenes, and briefed all the authors of the article).

A cross-classified analysis table was filled out collaboratively by both the student assistant and authors. The results were validated communicatively in the research group. Subsequently, the results were summarised for the individual categories, differences and similarities between the games were worked out, and the respective research question was answered. Although a qualitative game analysis was carried out, some tables and relative values are presented below to provide a better overview of the results.

Table 1. Overview of analysis categories, analysis questions, and sample data.

Category of Analysis	Question for Analysis	Game Analysis Anchor Data Example
(1) Types of stakeholders	Who are the stakeholders in the game?	Banished: The stakeholders of the game are inhabitants of a village in a struggle for survival against nature. They are simulated with their attributes on an individual level and summarised collectively as a whole population via averaged values.
(2) Number of stakeholders	How many stakeholders are in the game?	SimCity4: There are up to five player-created residents (Sims) and seven advisors from the areas of urban planning, finance, public affairs, safety, health and education, and transport and environmental protection, as well as the total population as one actor.
(3) Representation of stakeholders	How are the stakeholders presented?	Cities: Skylines: The inhabitants of the city move through the city visually. They can also be clicked on and tracked. Clicking on them reveals their name, age, education level, place of residence, and place of employment. If you zoom in close enough, you can see the avatar of the character.
(4) Actor communication	How do the stakeholders communicate their perceptions, interests, and goals in the game?	Tropico 6: The interest groups and superpowers, as well as the broker, communicate their needs through missions that can be rejected or accepted by the player. Completing the mission improves relations with the respective actor and unlocks rewards. Rejection or failure of the mission leads to a deterioration of relations with the mission giver.
(5) Areas of linguistic competence	Which language competencies (reading, listening, writing, speaking) are present and to what extent are they addressed in the game?	Cities: Skylines: A few short informative and explanatory texts must be read. There is no hearing, writing, or speaking in the game.
(6) Language operations and text procedures	What linguistic schemes of action and corresponding text procedures that mark different positions occur?	Tropico 6: Because the game contains several texts in which different stakeholders convince the player of their opinion, there are argumentative language operations and text procedures for positioning, perspectivising, conceding, and comparing.
(7) Controversial views and conflicts	To what extent do conflicts of interest exist between the stakeholders in the game?	Tropico 6: The interest groups impose ultimatums, and the expiry of an ultimatum has strong negative effects. These can be economic crises, strikes, or even coup attempts. It can happen that two interest groups make opposing demands on the player and he/she has to choose between them.
(8) Possible solutions for conflicts	How are conflicts between stakeholders handled?	Anno 2070: The three meta-factions resolve their conflicts through democratic elections in the World Council. The settlements sanction misconduct through military attacks. One can also conclude diplomatic agreements and trade.

4. Results of the Game Analysis

The empirical results on the respective research questions are presented below.

4.1. What Types of Stakeholders Are Present in the Games Under Study?

The types of stakeholders (see Table 1, category 1) represented in the model (players, co-players, NPCs: total population, population groups, individual stakeholders) are found in varying numbers and combinations in the games analysed (see Table 2 below).

Table 2. Overview about types of stakeholders in the analysed games.

Games	Total Population	Groups	Individual Stakeholders	4 Other Players
Tropico 6	☒	☐	☐	☒
Anno 2070	☒	☒	☐	☒
Democracy 3	☒	☒	☒	☐
SimCity 4 Deluxe Edition	☒	☒	☒	☒
Anno 1800	☒	☐	☒	☒
Banished	☒	☐	☒	☐
SimCity BuildIt	☒	☐	☒	☐
Age of Empires 2	☐	☐	☐	☒
Cities: Skylines	☒	☐	☒	☐
Overcrowd	☒	☐	☒	☐
Rise of Industry	☒	☒	☐	☐
Civilization 6	☒	☐	☐	☒
Frostpunk	☒	☐	☒	☐
Die Siedler 7	☐	☐	☐	☒
Fate of the World	☒	☐	☐	☐
Transport Fever	☐	☐	☒	☐
Eco	☐	☐	☐	☒
Overall	14 82.4%	5 29.4%	11 64.7%	7 41.2%

In all the games, the player takes on a specific role defined by the game narrative. He is the main actor who determines the fate of a country, an island, a civilisation, a city, etc., e.g., as planner, dictator, leader, president, ruler, mayor. In most games, the player has the opportunity to customise his role according to his interests. In all the games, he has a lot of power in the game context and has to make important decisions, weighing up the different interests of the other players and the various NPCs. Only in a few of the games analysed is the player represented in the game by his own character (e.g., SimCity 4) and mostly not visually (e.g., Cities: Skylines).

With regard to the frequency and representation of the stakeholders, the following results are available (see Table 1, categories 2 and 3). A total of 41.2% of the games analysed are multiplayer games. The other players cannot be seen as characters, with the exception of Tropico 6 and ECO. In the multiplayer games, the other players are either competitors or allies. Agreements can be made through communication, and in very few games, such as ECO and Civilization 6, collectively binding decisions can be made through elections. As the other players bring their own interests and goals into the game, which the main player then has to take into account when making decisions, they increase multiperspectivity. In 82.4% of the games analysed, the population as a whole exists as an actor, expressing its will primarily as working citizens, inhabitants, or voters, and influencing the decisions of the player (see Table 2). Information is provided mainly through statistics that the player

can read, such as the "satisfaction" of the population. In Frostpunk, for example, values for "Hope" and "Dissatisfaction" are displayed. If hope reaches zero or dissatisfaction reaches its maximum and stays there for a certain amount of time, the game is lost. Individual social groups are represented much less frequently (29.4%) in the games analysed (see Table 2). These are often represented by portraits of their representatives with names, pictures, and information about interests/goals (e.g., Democracy, Sim City 4, Civilization 6).

The population groups usually have very different interests. In Anno 2070, for example, there are three factions: the Eden Initiative represents environmentalists, the Tycoons represent heavy industry, and the Tech faction represents science. In SimCity 4 Deluxe Edition, the collective interests of certain groups in society are represented by individual "Advisors". There is an Advisor from each of the following areas: urban planning, finance, public affairs, security, health and education, transportation, and environmental protection, who have different interests (see Figure 2).

Figure 2. Screenshot from SimCity 4 Deluxe Edition (Electronic Arts, Aspyr Media). You can see the whole city. At the bottom is the menu with a live ticker showing the needs of the inhabitants (Sims). At the top are the advisors, who are represented by pictures and have different perspectives. As there are problems with the traffic (live ticker), the traffic planner is highlighted in red.

In Civilization 6, different civilisations compete for one of several victory conditions, such as economic, cultural, political, scientific, or military victory. In this case, there are collective stakeholders with the same interests, which creates a competitive situation when resources are scarce.

In games where social groups are the stakeholders, the number of groups varies greatly. Among the games we analysed, Democracy is the game with the most actor groups (there are a total of 21 types of voters, two parties, four donors, 7 ministers, 11 activist groups, 9 terrorist groups, and a focus group with 70 individuals). The higher the number of groups, the higher the complexity and multiperspectivity of the game is.

In the majority of games analysed (64.7%), there are also NPCs as individual stakeholders representing their individual interests. These are usually the inhabitants of the game area. Most of them are animations, but they have little influence on the course of

the game and the player's decisions. Some of them have individual names and photos. In Transport Fever, the inhabitants of the city walk or drive across the map as 3D objects. Apart from the simulated movement, they have no life of their own. Often, they seem to serve only as an illusion of the area and its inhabitants.

In Banished, residents walk through the city as characters—from their own homes to their own workplaces. They have attributes such as age, health, and happiness, which are displayed individually. Players can learn about each person but cannot directly influence their statistics. People who are hungry, for example, cannot be given food.

In Cities: Skylines, clicking on the avatars of the city's inhabitants will reveal their name, age, education level, location, and occupation. However, this individual information is of little practical value to the player, who has to make decisions for the whole city. Similar animations can be found in Sim City 4, Banished, Frostpunk, Transport Fever, and Anno 2070.

If we compare the analysed games according to the types of stakeholders they contain, we find that only Tropico 6 and Anno 2070 contain all the analysed types of stakeholders. These are the games with the highest degree of multiperspectivity in terms of this criterion. In Transport Fever, Fate of the World, Eco, and Settlers 7, on the other hand, only one other type of actor was integrated in addition to the player role, so in these cases, there is a much lower degree of multiperspectivity.

4.2. How Do the Stakeholders Communicate Their Perspectives in the Games and in Which Way Is Multiperspectivity Expressed Linguistically?

The stakeholders in the games communicate their perspectives in very different ways (see Table 1, category 4). A wide variety of media are used, such as statistics, graphics, headlines, information texts, symbols, chats, or interview sequences. The needs and interests of the population as a whole can be captured in almost all the games studied by means of summary statistics (see an example in Figure 3).

Figure 3. Screenshot from Frostpunk. The perspective of the population as a whole is conveyed here by bars indicating collective dissatisfaction and hope. Symbols show how many inhabitants lack food or are sick or injured. In addition, a commentary is used to reflect the perspective of the residents of the settlement. The resident expressing the opinion is irrelevant as an individual, and his or her opinion represents the opinion of the entire population. Source: All Rights Reserved ©2009–2023, 11 bit studios S.A.

A very common statistic is the "satisfaction score", which changes constantly in response to the actions of the game. Headlines are also often used to inform the player about the opinions and needs of the population, as in Sim City 4. The populace will

also sometimes give the player orders to carry out, and the player will be rewarded for doing so. In some cases, the actions of the player will be commented on by individual townspeople and evaluated in short sentences. In some cases, symbols such as smiles are used to communicate approval of the player's actions.

With enemies and allies, communication can often take place as dialogue by choosing from pre-defined text responses. In addition, the avatars of individual citizens can often be clicked on. In this case, the player also receives information about their characteristics, and sometimes the player's actions are commented on or wishes are expressed, as in Transport Fever.

When there are groups of people or individual players in the game, they usually express their needs and interests in short written statements. In Civilization 6, leaders speak in their own language in the diplomacy window. A Hungarian leader, for example, will speak in Hungarian, which will then be "translated" into the language of the game.

In Tropico, the superpowers and interest groups present their opinions and motivations in their missions, which the player must carry out. Communication with other human players is usually conducted through chats.

In the games analysed, there is usually very little information about the population as a whole and about individual inhabitants, from which the player must learn the wishes, interests, and perspectives and take them into account in his decisions. In contrast, representatives of population groups usually increase multiperspectivity considerably. These groups usually communicate their perspectives and desires in a very extensive way, some of which are contradictory and controversial. The communication of other human stakeholders is also extensive, which also increases multiperspectivity.

With regard to the linguistic representation of multiperspectivity (see Table 1, categories 5 and 6), it can generally be said that visual representation is predominant in most of the games, with a few exceptions of higher text content in Democracy 3, Overcrowd, and Settlers 7, where the relationship between language and images is balanced. In general, language and images function as complementary information carriers in the games.

The most frequently addressed linguistic skill in the games is reading. In the games Settlers 7, Anno 1800, and Anno 2070, reading comprehension is essential, as it is the necessary basis for progressing and winning in the game. The games Democracy 3, Civilization 6, Transport Fever, SimCity 4 Deluxe, SimCity BuildIt, Frostpunk, Rise of Industry, Fate of the World, and Cities: Skylines contain very little text. The game Banished does not even require text. The listening skill is only addressed in a few games, such as Anno 1800, Frostpunk, and Civilization 6, where the texts are read aloud. In most games, players can communicate in writing via chat. However, they are not always allowed to compose freely but have to choose between pre-formulated answers, as in the games SimCity BuildIt, Anno 1800, Frostpunk, Democracy 3, Civilization 6, and Fate of the World.

Finally, argumentative action schemes and text procedures of positioning, justification, and argumentation can be found in the games Anno 1800 and Overcrowd. Text procedures of perspectivisation, justification, and comparison can be found in Democracy 3 and Tropico 6. In Tropico 6, there are also text procedures for conceding.

In Anno 2070, in the context of elections, candidates take positions on specific issues and justify their opinions; however, corresponding text procedures with a higher degree of elaboration are hardly or not at all used. In SimCity BuildIt and Civilization 6, citizens also sometimes argue in the game but do not use appropriate textual procedures.

In the active player storyline, there are no argumentative storylines in SimCity BuildIt, Settler 7, Transport Fever, SimCity 4 Deluxe Edition, Banished, Cities: Skylines, Rise of Industry, and Fate of the World. Of course, there is the possibility to use different

argumentative language operations in the games with chat, where independent formulation of the players is partly allowed.

4.3. What Conflicts Arise from the Different Perspectives in the Game and What Possible Solutions Does the Game Design Provide?

The results for analysis categories 7 and 8 (see Table 1) are as follows: As the communication analysis has already shown, the extent to which the perspectives of the population as a whole and of individual inhabitants are modelled in the games is generally not very substantial. Since only a few game-relevant interests and desires are communicated by these stakeholders, no conflicts arise that the player would have to resolve in the absence of other stakeholders.

This is different in games where there are different population groups, which usually have different interests. This increases the multiperspectivity of the game, as it is usually not possible for the players to satisfy the conflicting needs and interests at the same time. A cognitive conflict is created, and very different game strategies and game experiences open up to the player, depending on which population or constituency group he/she supports. If the interests of a certain group are supported by the player, the approval ratings of this group usually increase, thus securing the political or economic power of the player. Sometimes social groups are also interesting as opponents, competing with the player for space, resources, and population. Likewise, conflicts with other human players can arise when competing for the same space and resources. In general, conflicts arising from the different perspectives and interests of the stakeholders can be resolved by the player either politically, economically, or militarily (see an example in Figure 4).

Figure 4. Screenshot from Civilation 6 (2K Games): Overview of the Inca civilisation. Below, one can see political, economic, and military interactions that the player can choose. The figure on the right in the screenshot is the leader of the contacted civilisation.

Some games include democratic elections as a way of resolving political conflicts, most notably, Democracy, which allows parties to run campaigns and donors to fund them. In Anno 2070, the World Council also has elections. In Civilization VI, for example, there is a World Congress. In Tropico 6, campaign speeches can be made to improve citizens' approval of the player's policies, and citizens can vote in elections to express their approval or disapproval. In ECO, players can propose laws and vote on them in a World Congress.

If they get a majority, they become law. Other ways to resolve conflicts politically are diplomatic agreements, as in Anno 2070, Civilization VI, etc.

Another way to deal with conflicts of interest is through military conflict. War can be declared against opposing parties, but this is only possible in a few of the games analysed, such as Anno 2070 and 1800, Tropico 6, and Civilization VI. In some games, such as Age of Empires 2, conflicts are resolved exclusively by military means.

The third option, implemented in some games, is to resolve conflicts through economic means. In many games, such as Tropico 6, trade routes can be established or abandoned, and in Rise of Industry and Anno 1800, shares can be bought.

5. Discussion

Teaching the competence to understand different perspectives and to change perspectives is a very important educational goal, and the integration of multiperspectivity is discussed extensively in relation to various school subjects (Vasiljuk & Budke, 2021b; Krüger, 2012; Duncker, 2005). Deficits in the teaching media and problems with implementation by teachers have also been empirically analysed (Vasiljuk & Budke, 2021a; Wansink et al., 2018). The extent to which commercial digital strategy games have a multiperspective game design and are potentially suitable as teaching media for teaching the competence to change perspective has not yet been researched and was therefore the focus of our study. The theoretical model developed (see Figure 1) and the categories of analysis derived from it (see Table 1) proved to be very useful for investigating the precise integration of multiperspectivity into the design of the games. They can also be used for further studies in this area. Strategy and management games are situated between "simulations", which are primarily intended to be "true", and "games", which are intended to be "fun" (Stenros, 2016). In contrast to pure simulations, such games do not aim to create a fully realistic model of the world outside the game and can therefore be somewhat simplified. This also applies to the aspect of multiperspectivity analysed in the sample.

In relation to the research question, "What types of stakeholders are present in the games studied?", it can be stated that the following stakeholders are present in digital strategy games: players, co-players, non-player characters (NPCs): total population, population groups, and individual stakeholders. However, it should be noted that the number and combination of stakeholders in the games analysed varies greatly. With respect to the research question, "How do stakeholders communicate their perspectives in the games and how is multiperspectivity expressed linguistically?", it must be said that the players' perspectives and their meaning in the game context are not obvious. They often have to be analysed using many different media, such as headlines, symbols, speech bubbles, or short messages, which can be found in a wide variety of menu items and can be used to practise students' competencies for material-based work, in which a wide variety of media have to be accessed, analysed, and linked (Budke et al., 2020). A wide variety of media are used, such as statistics, graphics, headlines, information texts, symbols, chats, or interview sequences. While, in some games, linguistic action is a necessary prerequisite for the game, in others, it plays a minor role. The range of linguistic patterns used to introduce and compare different perspectives also varies considerably from game to game.

Language and images function as complementary information carriers in the games. Multimodality and interactivity can presumably support the understanding of content and thus the perspectives of individual stakeholders. Overall, it can be said that the degree of multiperspectivity increases with the amount of communication between stakeholders, who make their views known in different ways.

Regarding the third research question, "What conflicts arise from the different perspectives in the game and what solutions does the game design offer?", it was found that

the divergent perspectives of different stakeholders are an important element of game design in many games. The clash between the different perspectives of the stakeholders, based on their different perceptions, interests, and evaluations, is of great importance and allows the player to make interesting decisions. The player cannot satisfy all of the players' interests at the same time and has to take sides with certain players, which sometimes leads to unpredictable consequences in the game. The player experiences the pronounced multiperspectivity in these games as "polytelic situations", which means that the player as a decision maker is confronted with conflicting goals that need to be reconciled (Czauderna & Budke, 2020).

Betsch et al. (2011) showed that the core gameplay of strategy games is often designed around polytelic conflicts, i.e., that strategy games usually contain conflicting goals that require the player to identify their priorities and make a series of decisions (Betsch et al., 2011). In game studies, goals are usually understood as "the objectives or conditions that define success in the game" (Zagal et al., 2007). In games with a high degree of multiperspectivity, the player must analyse the perspectives of the stakeholders and then develop strategies to take their interests at least partially into account in his decisions; otherwise, the game cannot be played successfully. In the games, different solutions can also be experienced. Conflicts can generally be resolved by the player either politically, economically, or militarily.

The analysis has shown that there is no clear answer to the overarching research question of the extent to which commercially successful strategy games dealing with social challenges integrate multiperspectivity into the game design. All of the games in the sample have integrated additional stakeholders into the game system in addition to the player's main character, but the degree of multiperspectivity is very low in some games. Low levels of multiperspectivity are found in Transport Fever, Fate of the World, Eco, and Settlers 7. Medium levels of multiperspectivity are found in Banished, SimCity BuildIt, Age of Empires 2, Cities: Skylines, Overcrowd, Rise of Industry, Civilization 6, and Frostpunk. On the other hand, players of Anno 1800, Sim City 4 Deluxe Edition, Democracy 3, Anno 2070, and Tropico 6 experience a high degree of multiperspectivity.

The results show a representative range (from weak to very strong) of the integration of multiperspectivity in digital commercial strategy and management games and explain this comprehensibly in the context of the game design. However, the exact level of multiperspectivity of a game that was not part of our sample cannot be determined without detailed analysis, and the results cannot easily be transferred to other types of games. The model we developed (see Figure 1) has proven to be very useful for the analysis and can also be easily applied to the analysis of other games and other game types.

Limitations

This study has focused on strategy games because, as previous analyses have shown, they often integrate socially controversial topics, such as climate change, urban development, or sustainability or resource use, which are also dealt with in school lessons (Lux & Budke, 2020a). The analysis has demonstrated that some of the games analysed incorporate multiperspectivity as a pivotal element of the game mechanics, thereby facilitating interesting decisions and offering potential for educational purposes. It must be stressed, however, that other game genres may also have this potential, such as digital role-playing games. This is a hypothesis that merits further investigation through additional analysis. The present analysis has attempted to address the question of whether multiperspectivity can be identified in the games studied and what its significance might be, without delving into the specific content-related perspectives that were disseminated. Consequently, it is not possible to answer the question of the balance of perspectives or the direction in

which players should be influenced. However, an earlier analysis of interviews with game designers revealed a general tendency to appeal to a diverse audience and to facilitate a wide range of perspectives and choices (Budke & Czauderna, 2023). This finding seems to contradict the notion of a biased selection of stakeholders and their perspectives. The present study focuses on the implementation of multiperspectivity in digital games and does not examine the experiences of players when they play these games. Consequently, it cannot be determined with certainty whether players are consciously aware of the multiple perspectives present in the games. Furthermore, the relationship between the conflicts experienced in the games as a result of multiple perspectives and real-life conflicts in the context of the issues that players are dealing with remains to be explored. Previous analyses suggest that players generally reflect positively on the game mechanics but rarely reflect on the differences and similarities between the virtual and real worlds (Lux & Budke, 2023). Consequently, the learning effect of the games is minimal and can only be enhanced if reflection is didactically planned in the debriefing and guided in the classroom. Further research is needed to determine how the identified educational potential can be effectively implemented in the classroom setting.

All in all, our study shows that some commercial strategy games are designed in a way that has the potential to stimulate multiperspectivity, but it also indicates (a) that this is not necessarily the case, and games require close analysis before being used in the classroom. The analysis in this paper can provide guidance for this. Furthermore, (b) it seems not enough to simply play games. Dealing with them must be didactically framed in a reflexive way in order to stimulate multiperspectivity in a more sustainable way.

Author Contributions: Formal analysis, A.B., A.C., D.G. and A.L.Z.; Investigation, A.B., A.C., D.G. and A.L.Z.; Data curation, A.B.; Writing—original draft, A.B., A.C., D.G. and A.L.Z.; Writing—review & editing, A.B. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: The raw data supporting the conclusions of this article will be made available by the authors on request.

Acknowledgments: We would like to thank Anton Sagel, who supported us intensively with the game analysis as a student assistant.

Conflicts of Interest: The authors declare no conflict of interest.

References

Ataeian, A. (2013). *Vom standpunkt des erkennens: Nietzsches philosophie des perspektivismus*. LIT.

Baßeng, G., & Budke, A. (2024). Reflexion über fachliche inhalte am beispiel des stadtaufbauspiels PocketCity durch Schüler* innen als grundlage für den geographieunterricht. *GW-Unterricht*, *172*(4), 5–21. [CrossRef]

Becker-Mrotzek, M., Grabowski, J., Jost, J., Knopp, M., & Linnemann, M. (2014). Adressatenorientierung und Kohärenzherstellung im Text. Zum Zusammenhang kognitiver und sprachlicher realisierter Teilkompetenzen von Schreibkompetenz Didaktik. *Deutsch: Halbjahresschrift für die Didaktik der Deutschen Sprache und Literatur*, *19*(37), 21–43.

Betsch, T., Funke, J., & Plessner, H. (2011). *Denken-urteilen, entscheiden, problemlösen*. Springer.

Budke, A., & Czauderna, A. (2023). Mündige entscheidungen in digitalen spielen. Modellentwicklung und ergebnisse aus qualitativen interviews mit game designern. In F. Pettig, & I. Gryl (Eds.), *Geographische bildung in digitalen kulturen* (pp. 157–169). Perspektiven für Forschung und Lehre. [CrossRef]

Budke, A., Gebele, D., Königs, P., Schwerdtfeger, S., & Zepter, A. (2020). Student texts produced in the context of material-based argumentative writing: Interdisciplinary research-related conception of an evaluation tool. *RISTAL*, *3*, 108–125. [CrossRef]

Chen, J. (2007). Flow in games (and everything else). *Communications of the ACM*, *50*(4), 31–34. [CrossRef]

Chen, J.-L., & Yeh, H.-J. (2018, May 28–31). *Conflicts between local fisheries and recreational activities in an no-take zone (NTZ) of Taiwan: Perspectives of multiple stakeholders*. OCEANS—MTS/IEEE Kobe Techno-Oceans (OTO) (pp. 1–5), Kobe, Japan. [CrossRef]

Cohen, J. (2001). Defining Identification: A theoretical look at the identification of audiences with media characters. *Mass Communication & Society*, *4*, 245–264.

Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal experience*. Harper & Row.

Cuhadar, E., & Kampf, R. (2014). Learning about conflict and negotiations through computer simulations: The case of peace maker. *International Studies Perspectives*, *15*(4), 509–524. [CrossRef]

Czauderna, A., & Budke, A. (2020). How Digital strategy and management games can facilitate the practice of dynamic decision-making. *Education Sciences*, *10*(4), 99. [CrossRef]

Davis, M. H. (1994). *Empathy: A social psychological approach*. Brown & Benchmark.

De Angeli, D., Finnegan, D. J., Scott, L., Bull, A., & O'Neill, E. (2018, October 28–31). *Agonistic games: Multiperspective and unsettling games for a social change*. 2018 Annual Symposium on Computer-Human Interaction in Play Companion Extended Abstracts (pp. 103–108), Melbourne, VIC, Australia. Available online: https://dl.acm.org/doi/abs/10.1145/3270316.3270594 (accessed on 16 October 2024).

Denisova, A., & Cairns, P. (2015, April 18–23). *First person vs. third person perspective in digital games: Do player preferences affect immersion?* 33rd Annual ACM Conference on Human Factors in Computing Systems (pp. 145–148), Seoul, Republic of Korea. [CrossRef]

Duncker, L. (1996). Zeigen und handeln. In *Studien zur anthropologie der schule*. Verlag Armin Vaas.

Duncker, L. (2005). Professionalität des zeigens. Mehrperspektivität als prinzip der allgemeinen didaktik. In L. Duncker, W. Sander, & C. Surkamp (Eds.), *Perspektivenvielfalt im unterricht* (pp. 9–21). Kohlhammer.

Elcheroth, G., Penic, S., Usoof, R., & Reicher, S. (2019). Multiple perspectives in conflict settings: An introduction. *Journal of Social and Political Psychology*, *7*(2), 913–924. [CrossRef]

Europarat. (2021). *Gemeinsamer europäischer referenzrahmen für sprachen: Lernen, lehren, beurteilen*. Available online: https://europass.europa.eu/de/what-common-european-framework-languages-cefr (accessed on 26 November 2024).

Feilke, H. (2012). Was sind textroutinen? Zur theorie und methodik des forschungsfeldes. Schreib-und textroutinen. In H. Feilke, & K. Lehnen (Eds.), *Theorie, erwerb und didaktisch-mediale modellierung* (pp. 1–31). Lang.

Feilke, H. (2014). Argumente für eine didaktik der textprozeduren. In *Werkzeuge des schreibens. beiträge zur didaktik der textprozeduren* (pp. 11–34). Fillibach.

Gebele, D., & Zepter, A. L. (2016). Sprachsensibler Fachunterricht im inklusiven Kontext. In *Sprachdidaktische perspektiven. Theorie, empirie, praxis. In der reihe KöBeS (Kölner beiträge zur sprachdidaktik)* (pp. 108–136). Gilles & Francke Verlag.

Gee, J. P. (2007). *What video games have to teach us about learning and literacy* (Rev. & updated ed.). Palgrave Macmillan.

Gogolin, I., Lange, I., Michel, U., & Reich, H. H. (2013). *Herausforderung Bildungssprache und wie man sie meistert* (FörMig ed.). Waxmann.

Hoffman, M. L. (1987). The contribution of empathy to justice and moral judgment. In N. Eisenberg, & J. Strayer (Eds.), *Empathy and its development* (pp. 47–80). Cambridge University Press.

Horn, A., Visser, M., Pittens, C., Urias, E., Zweekhorst, M., & Dijk, G. (2024). Transdisciplinary learning trajectories: Developing action and attitude in interplay. *Humanities and Social Sciences Communications*, *11*, 149. [CrossRef]

Kampf, R., & Nicolaidou, I. (2024). Using social impact games to overcome intractable conflicts: The case of Fact Finders and PeaceMaker. *Information, Communication & Society*, 1–16. [CrossRef]

Klimmt, C., & Hartmann, T. (2006). Effectance, self-efficacy, and the motivation to play video games. In P. Vorderer, & J. Bryant (Eds.), *Playing video games: Motives, responses, and consequences* (pp. 132–145). Erlbaum.

Krüger, A. (2012). Multiperspectivity as a basis of current German physical education. *Movement & Sport Sciences*, 11–23. [CrossRef]

Kuckuck, M. (2014). Konflikte im raum—Verständnis von gesellschaftlichen diskursen durch argumentation im geographieunterricht. In *Geographiedidaktische Forschungen*. Band 54. Monsenstein und Vannerdat.

Lux, J.-D., & Budke, A. (2020a). Alles nur ein spiel? Geographisches Fachwissen zu aktuellen gesellschaftlichen Herausforderungen in digitalen spielen. *GW Unterricht*, *160*, 22–36. [CrossRef]

Lux, J.-D., & Budke, A. (2020b). Playing with complex systems? The potential to gain geographical system competence through digital gaming. *Education Sciences*, *10*(5), 130. [CrossRef]

Lux, J.-D., & Budke, A. (2023). Reflexives spielen? Wie junge spielende repräsentationen gesellschaftlicher themen in digitalen spielen reflektieren. *MedienPädagogik: Zeitschrift für Theorie und Praxis der Medienbildung*, 188–211. [CrossRef]

Lux, J.-D., Budke, A., & Guardiola, E. (2021). Games versus reality? How game designers deal with current topics of geography education. *Multimodal Technologies and Interaction*, *5*, 70. [CrossRef]

Lütje, A., & Budke, A. (2021). Es sind doch begegnungen, wonach wir suchen. Narration und emotionalität im geographieschulbuch. *GW-Unterricht*, *161*(1), 35–50. Available online: https://www.gw-unterricht.at/index.php/onlineausgaben/24-2021/80-161-2021.html (accessed on 22 September 2024). [CrossRef]

Mayring, P. (2015). *Qualitative inhaltsanalyse. Grundlagen und techniken*. Beltz.

Nicolaidou, I., Egenfeldt-Nielsen, S., Zupancic, R., Hajslund, S., & Milinoi, D. L. (2023). Developing fact finders: A mobile game for overcoming intractable conflicts. *Social Science Computer Review*, *41*(4), 1166–1186. [CrossRef]

Peng, W., Lee, M., & Heeter, C. (2010). The effects of a serious game on role-taking and willingness to help. *Journal of communication*, *60*(4), 723–742. [CrossRef]

Piaget, J. (1975). L'équilibration des structures cognitives. In *Problème central du développement*. Presses Universitaires de France.

Reinhardt, S. (2004). Demokratie-kompetenzen. In W. Edelstein, & P. Fauser (Eds.), *Beiträge zur demokratiepädagogik. eine schriftenreihe des BLK-programms: "demokratie lernen & leben"* (pp. 1–27). BLK. Available online: https://www.pedocs.de/volltexte/2008/163/pdf/Reinhardt.pdf (accessed on 13 September 2024).

Reitschert, K., & Hößle, C. (2006). Die struktur von bewertungskompetenz. Ein beitrag zur dimensionierung eines kompetenzmodells im bereich der bioethik. In H. Vogt, & D. Komatsu (Eds.), *Peace education approach: Unity in diversity? Education and social cohesion in a post-conflict and divided nation*. Springer. [CrossRef]

Reuber, P. (2001). Möglichkeiten und Grenzen einer handlungsorientierten Politischen Geographie. In P. Reuber, & G. Wolkersdorfer (Eds.), *Politische geographie. Handlungsorientierte ansätze und critical geopolitics* (pp. 77–92). Selbstverlag des Geographischen Instituts der Universität Heidelberg.

Rezat, S. (2011). Schriftliches Argumentieren: Zur Ontogenese konzessiver argumentationskompetenz. *Didaktik Deutsch*, *31*, 50–67.

Rhode-Jüchtern, T. (1995). Raum als text. Prinzipien einer konstruktiven erdkunde. In *Materialien zur didaktik der geographie und wirtschaftskunde Bd. 11*. Institut für Geographie der Universität Wien.

Ryan, R. M., Rigby, C. S., & Przybylski, A. (2006). The motivational pull of video games: A self-determination theory approach. *Motivation and Emotion*, *30*, 347–363. [CrossRef]

Selman, R. L. (1984). *Die entwicklung des sozialen verstehens. Entwicklungspsychologische und klinische untersuchungen*. Suhrkamp.

Spinner, K. H. (2006). Literarisches lernen. *Praxis Deutsch*, *200*, 6–16.

Stenros, J. (2016). The game definition game: A review. *Games Cult*, *12*, 499–520. [CrossRef]

Stöber, G. (2001). Multiperspektivität im geographieschulbuch. In G. Stöber (Ed.), *Multiperspektivität im geographieunterricht. internationale schulbuchforschung bd. 23* (pp. 439–452). Verlag Hahnsche Buchhandlung.

Vasiljuk, D., & Budke, A. (2021a). Akteure im rahmen des perspektivenwechsels: Ergebnisse einer analyse von geographiedidaktischen unterrichtsmaterialien. *GW-Unterricht, Heft*, *162*, 18–30. [CrossRef]

Vasiljuk, D., & Budke, A. (2021b). Multiperspectivity as a process of understanding and reflection: Introduction to a model for perspective-taking in geography education. *European Journal of Investigation in Health, Psychology and Education*, *11*, 529–545. Available online: https://www.mdpi.com/2254-9625/11/2/38/pdf (accessed on 7 November 2024). [CrossRef] [PubMed]

Voegeli, G., & Finger, D. C. (2021). Disputed dams: Mapping the divergent stakeholder perspectives, expectations, and concerns over hydropower development in Iceland and Switzerland. *Energy Research and Social Science*, *72*, 101872. [CrossRef]

Vorderer, P. (2000). Interactive entertainment and beyond. In D. Zillmann, & P. Vorderer (Eds.), *Media entertainment: The psychology of its appeal* (pp. 21–36). Erlbaum.

Wansink, B., Akkerman, S., Zuiker, I., & Wubbels, T. (2018). Where does teaching multiperspectivity in history education begin and end? An analysis of the uses of temporality. *Theory and Research in Social Education*, *46*(4), 495–527. [CrossRef]

Wilson, P.-J. (2021). Climate change inaction and optimism. *Philosophies*, *6*(3), 61. [CrossRef]

Yakter, A., & Tessler, M. (2018). Understanding multiple perspectives: The contribution of a short-essay assignment to teaching about the Arab–Israeli conflict. *PS Political Science & Politics*, *51*, 434–439. [CrossRef]

Zagal, J. P., Mateas, M., Fernández-Vara, C., Hochhalter, B., & Lichti, N. (2007, June 16–20). *Towards an ontological language for game analysis*. Digital Games Research Conference 2005, Changing Views: Worlds in Play (pp. 1–13), Vancouver, BC, Canada.