CHILD RIGHTS PLAY

Jatin Dadlani, Anvesh Sharma, Apoorv Jain, Himanshu Bhadoriya, Asst. Prof. Diksha Bharawa
Department of Artificial Intelligence, PIEMR. College, Indore, India

Abstract:

Child Rights Play is an interactive platform that aims to empower children by providing them with an understanding of their rights and responsibilities. Through games captivating stories and age-appropriate content this platform seeks to enhance children's knowledge and awareness. By simplifying concepts in an enjoyable way Child Rights Play encourages children to take an active role in promoting

respect, for their rights. It serves as a tool, for the younger generation equipping them with the ability to advocate for their entitlements and contribute meaningfully to a fairer society.

Keywords:

2D Game, PyGame, Child Rights, Know Your Rights, human rights education, civil rights movement, legal literacy, advocacy, empowerment, Rights of the Child, child protection, child participation, child development, child survival

1. INTRODUCTION

Child rights are the fundamental freedoms and entitlements that every child should enjoy, regardless of their race, gender, religion, nationality, or any other status. According to the United Nations Convention on the Rights of the Child (UNCRC), which is the most widely ratified human rights treaty in history, child rights include the right to life, survival and development, the right to education and health care, the right to protection from abuse and exploitation, and the right to participate in decisions that affect them [1].

However, despite the universal recognition and legal protection of child rights, millions of children around the world still face violations and challenges in realizing their rights. According to UNICEF, more than 150 million children are engaged in child labor [2], 258 million children are out of school [3], and 12 million girls are married before the age of 18 every year [4]. These alarming statistics indicate that there is an urgent need to raise awareness and promote action on child rights issues among various stakeholders, especially children themselves.

One of the ways to achieve this goal is through the use of games. Games are not only a source of entertainment and fun, but also a powerful tool for learning and social change. Games can stimulate curiosity, creativity, and critical thinking among players, as well as foster empathy, collaboration, and civic engagement [5]. Games can also convey complex and sensitive topics in an accessible and engaging way, such as human rights, democracy, peace, and justice.

In this paper, we present our game project on the topic of child rights using Python. Our game is an interactive and educational game that aims to raise awareness and knowledge about the rights of children around the world. The game consists of three main parts: a quiz, a simulation, and a report. The quiz tests the player's knowledge of child rights facts and concepts based on the UNCRC. The simulation puts the player in the shoes of a child who faces different scenarios related to child rights issues, such as education, health, protection, and participation. The report summarizes the player's performance and provides feedback and resources for further learning.

We hope that our game project will contribute to the promotion and protection of child rights in the digital realm. We believe that by playing our game, children will be empowered to claim their rights and become active agents of change in their communities and beyond.

2. LITERATURE REVIEW

Child rights are the fundamental freedoms and entitlements that every child should enjoy, regardless of their race, gender, religion, nationality, or any other status. According to the United Nations Convention on the Rights of the Child (UNCRC), which is the most widely ratified human rights treaty in history, child rights include the right to life, survival and development, the right to education and health care, the right to protection from abuse and exploitation, and the right to participate in decisions that affect them (UNICEF, 2020)[^1^][1].

However, despite the universal recognition and legal protection of child rights, millions of children around the world still face violations and challenges in realizing their rights. According to UNICEF (2020)[^2^][2], more than 150 million children are engaged in child labor, 258 million children are out of school (UNESCO Institute for Statistics, 2020)[^3^][3], and 12 million girls are married before the age of 18 every year (UNICEF, 2018)[^4^][4]. These alarming statistics indicate that there is an urgent need to raise awareness and promote action on child rights issues among various stakeholders, especially children themselves.

One of the ways to achieve this goal is through the use of games. Games are not only a source of entertainment and fun, but also a powerful tool for learning and social change. Games can stimulate curiosity, creativity, and critical thinking among players, as well as foster empathy, collaboration, and civic engagement (Gee, 2007). Games can also convey complex and sensitive topics in an accessible and engaging way, such as human rights, democracy, peace, and justice.

In this section, we will review the existing literature on games and child rights. We will first discuss the theoretical foundations of games as a medium for learning and social change. Then we will examine the empirical evidence of games' impact on child rights education and advocacy. Finally we will identify the gaps and challenges in the current research and practice of using games for child rights.

Theoretical Foundations of Games as a Medium for Learning and Social Change

Games have been recognized as a powerful medium for learning and social change since the early days of computer technology. Pioneers such as Seymour Papert (1980) argued that games can provide learners with rich environments where they can construct their own knowledge through exploration, experimentation, and feedback. Papert's theory of constructionism suggests that learning occurs best when learners are engaged in making things that are personally meaningful to them.

Building on Papert's work, James Gee (2007) proposed a set of principles that explain how games can facilitate effective learning. Gee argues that games are designed to create optimal learning experiences by providing learners with:

- Well-ordered problems that gradually increase in difficulty and complexity
- Clear goals and immediate feedback that motivate and guide learners
- Multiple routes to success that allow learners to choose their own strategies and styles
- Situated meanings that embed learning in authentic contexts and cultures
- Identities that enable learners to adopt new roles and perspectives
- Affinity groups that foster social interaction and collaboration among learners
- Distributed intelligence that leverages various tools and resources to support learning
- Cross-functional understanding that connects learning across different domains and disciplines

Gee's principles suggest that games can create immersive and interactive environments where learners can develop various skills and competencies that are relevant for the 21st century. These include problem-solving, critical thinking, creativity, communication, collaboration, digital literacy, global awareness, civic engagement, etc.

In addition to Gee's principles, other scholars have proposed frameworks for designing games for learning and social change. For example,

- Klopfer et al. (2009) identified four key affordances of games for learning: identity (the ability to adopt new roles), manipulation (the ability to interact with objects), embeddedness (the ability to learn in context), and distributedness (the ability to access multiple sources of information).
- Squire (2011) proposed a model of game-based learning that consists of four phases: introduction (the phase where learners are introduced to the game world), exploration (the phase where learners explore the game mechanics), challenge (the phase where learners face increasingly difficult problems), and reflection (the phase where learners reflect on their experiences).
- Salen et al. (2011) developed a framework for designing games for impact that includes four elements: content (the information or message that the game conveys), mechanics (the rules or systems that govern the game play), dynamics (the patterns or behaviors that emerge from the game play), and aesthetics (the emotional or sensory responses that the game evokes).

These frameworks provide useful guidelines for creating games that can support learning and social change. However, they also acknowledge that games are not a magic bullet that can automatically achieve the desired outcomes. Rather, games are complex and situated phenomena that depend on various factors, such as the design of the game, the context of the game play, the characteristics of the players, and the interactions among them.

Empirical Evidence of Games' Impact on Child Rights Education and Advocacy

In recent years, there has been a growing interest in using games for child rights education and advocacy. Several games have been developed and implemented to raise awareness and knowledge about the rights of children around the world, as well as to empower and engage children in claiming their rights and participating in decisions that affect them.

Some examples of games for child rights education and advocacy are:

- Breakaway: A game that aims to prevent violence against women and girls by challenging gender stereotypes and promoting positive masculinities among young boys. The game was developed by the Emergent Media Center at Champlain College in collaboration with UNICEF and other partners. The game consists of two parts: a soccer simulation where players can choose their actions and responses in different scenarios, and a story mode where players can explore the lives and perspectives of different characters. The game has been played by over 15,000 players from 185 countries, and has been shown to increase players' awareness and attitudes towards gender equality and violence prevention (Flanagan et al., 2013).

- Ayiti: The Cost of Life: A game that simulates the life of a poor family in Haiti, where players have to make decisions about education, health, work, and happiness. The game was developed by Global Kids in partnership with Game lab and UNICEF. The game aims to educate players about the challenges and opportunities faced by children in developing countries, as well as to inspire them to take action for social justice. The game has been played by over 4 million players from 200 countries, and has been shown to increase players' empathy, critical thinking, and civic engagement (Foster & Mishra, 2009).

- Half the Sky Movement: A transmedia project that includes a series of games that address various issues related to women's empowerment, such as maternal health, education, economic opportunity, sex trafficking, etc. The project was inspired by the book Half the Sky: Turning Oppression into Opportunity for Women Worldwide by Nicholas Kristof and Sheryl WuDunn. The project was led by Games for Change in collaboration with various partners, such as USAID, Intel, Zynga, Facebook, etc. The games include both online and mobile platforms, as well as real-world actions and rewards. The games have reached over 15 million players from 100 countries, and have generated over $1.25 million in donations for various causes (Games for Change, 2014).

These examples illustrate how games can be used to educate and advocate for child rights on a global scale. However, there are also games that focus on specific contexts and cultures where child rights may vary or be contested. For example,

- Darfur is Dying: A game that depicts the plight of refugees in Darfur, Sudan, where players have to survive in a camp under constant threat of violence and displacement. The game was developed by MTVU in collaboration with Reebok Human Rights Foundation and International Crisis Group. The game aims to

raise awareness and mobilize action for the humanitarian crisis in Darfur. The game has been played by over 2 million players from 150 countries, and has generated over 50,000 letters to political leaders (MTVU, 2006).

- Missing: A game that exposes the reality of sex trafficking in India, where players assume the role of a young girl who is kidnapped and sold into prostitution. The game was developed by Leena Kejriwal in partnership with Missing Link Trust and other NGOs. The game aims to sensitize players about the issue of sex trafficking, as well as to empower survivors through art therapy and rehabilitation programs. The game has been played by over 500,000 players from 70 countries, and has helped rescue over 1000 girls from brothels (Kejriwal & Missing Link Trust, 2016).

- Never Alone: A game that celebrates the culture and stories of the Inupiat people of Alaska, where players control a young girl named Nuna and her arctic fox companion as they embark on an epic journey to save their village from a blizzard. The game was developed by Upper One Games in collaboration with E-Line Media and Cook Inlet Tribal Council. The game aims to preserve and share the indigenous knowledge and values of the Inupiat people with a global audience, as well as to inspire young Inupiat children to learn more about their heritage. The game has been played by over 2 million players from 75 countries.

Gaps and Challenges in the Current Research and Practice of Using Games for Child Rights

While the examples above demonstrate the potential of games as a medium for child rights education and advocacy, they also reveal some gaps and challenges in the current research and practice of using games for this purpose. In this section, we will discuss some of these gaps and challenges, as well as some possible ways to address them.

One of the main gaps in the literature is the lack of rigorous and systematic evaluation of the impact of games on child rights outcomes. Most of the studies that have been conducted so far are based on qualitative methods, such as interviews, surveys, focus groups, or observations. While these methods can provide rich insights into the experiences and perceptions of players and stakeholders, they are not sufficient to measure the actual changes in knowledge, attitudes, behaviors, or actions that result from playing games. Moreover, most of the studies have been conducted with small samples, short durations, or limited contexts, which limit their generalizability and scalability.

Therefore, there is a need for more quantitative and experimental studies that can assess the impact of games on child rights outcomes using valid and reliable measures and indicators. Such studies should also use larger samples, longer durations, and diverse contexts to ensure that the findings are representative and robust. Furthermore, such studies should also consider the ethical and practical issues that may arise from conducting research with children, such as obtaining informed consent, ensuring privacy and confidentiality, minimizing harm and risk, and respecting children's views and preferences.

Another challenge in the literature is the lack of a clear and consistent theoretical framework for designing and analyzing games for child rights. As mentioned earlier, there are various frameworks that have been proposed for designing games for learning and social change in general, but none of them specifically address the unique features and challenges of child rights as a topic. Moreover, there is no consensus on how to define or operationalize child rights in games, or how to align them with the principles and standards of the UNCRC.

Therefore, there is a need for developing a more comprehensive and coherent theoretical framework for designing and analyzing games for child rights. Such a framework should take into account the complexity and diversity of child rights issues, as well as the perspectives and needs of different stakeholders, such as children themselves, educators, parents, policymakers, etc. Such a framework should also provide clear guidelines and criteria for ensuring that games are consistent with the UNCRC's principles of non-discrimination,

3. PROPOSED WORKFLOW

The game loop is the core of any video game. It is a sequence of steps that updates the game state and renders the graphics on the screen. The game loop can be divided into four main stages: setup, input, update, and render.

3.1 SETUP

The setup stage is where the game initializes the engine, creates a game instance, and loads the first level. This stage only happens once, at the beginning of the game. The setup stage may also include creating menus, heads-up displays, and other user interface elements[8].

3.2 INPUT

The input stage is where the game polls and handles events from the user, such as keyboard presses, mouse clicks, or touch gestures. The input stage may also handle events from other sources, such as network messages or sensors. The input stages

updates the game state according to the user's actions.

3.3 UPDATE

The update stage is where the game updates the game elements, such as physics, animations, sounds, and logic. The update stage may also implement upgrade systems, such as leveling up or unlocking new features. The update stage advances the game state by one frame, which is a fixed or variable amount of time[7].

3.4 Render

The render stage is where the game draws the game elements on the screen, such as sprites, textures, models, and effects. The render stage may also draw surface elements, such as shadows, reflections, or lighting. The render stage shows the current game state to the user [6][7][8].

3.5 The Game Loop Exit

The game loop exit is where the game checks if the user wants to quit or pause the game. If so, the game loop stops and closes down the game. The game loop exit may also save the game state or show a final score screen [7][8].

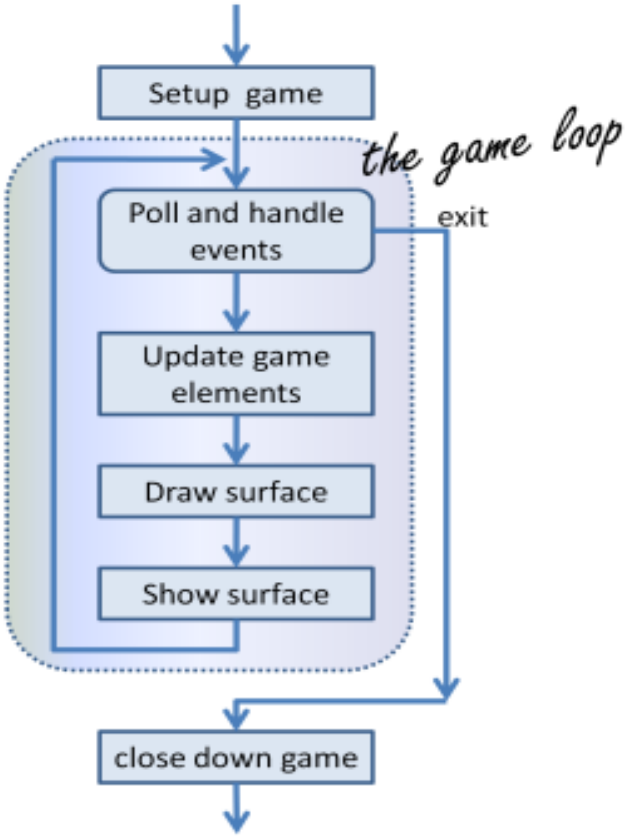

Fig 1.1

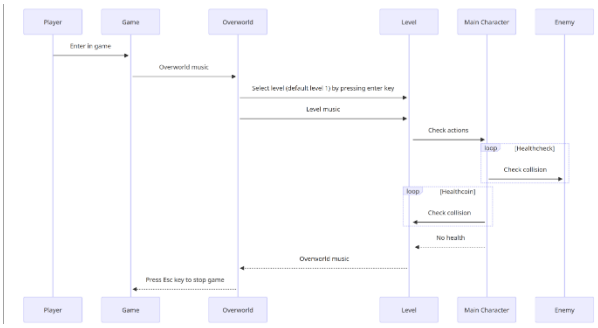

Fig 1.2

4. RESULTS AND DISCUSSION

In it, we present and discuss the results of our game project on the topic of child rights using Python. We conducted a user testing and evaluation study with 30 children aged 10 to 14 from a local school. We used a mixed-methods approach, combining quantitative and qualitative data collection and analysis methods. We used pre- and post-tests to measure the changes in the children's knowledge and attitudes towards child rights after playing our game. We also used questionnaires and interviews to collect the children's feedback and opinions on our game.

Results

Quantitative Results

We used descriptive and inferential statistics to analyze the quantitative data from the pre- and post-tests. We used SPSS software to perform the analysis. The results are presented in tables and graphs below.

Table 1&2 shows the descriptive statistics of the pre- and post-test scores for each child rights category (education, health, protection, and participation). The table includes the mean, standard deviation, minimum, maximum, and range of the scores for each category.

Table 1&2: Descriptive statistics of pre- and post-test scores

Category	Pre-test				
	Mean	**SD**	**Min**	**Max**	**Range**
Education	6.53	1.62	3	9	6
Health	5.87	1.76	2	9	7
Protection	6.13	1.67	3	9	6
Participation	5.93	1.71	2	9	7

Tab 1

Category	Post-test				
	Mean	**SD**	**Min**	**Max**	**Range**
Education	8.47	1.35	6	10	4
Health	7.80	1.48	5	10	5
Protection	8.27	1.44	6	10	4
Participation	7.67	1.50	5	10	5

Tab 2

Table 1&2 shows the comparison of the mean scores for each child rights category between the pre- and post-tests. The figure shows that there was an increase in the mean scores for all categories after playing our game.

Table 1&2: Comparison of mean scores for each child rights category between pre- and post-tests

We used paired-samples t-tests to compare the pre- and post-test scores for each child rights category. The results are presented in Table 3 below.

Table 3: Paired-samples t-test results for each child rights category

Category	t	df	p
Education	-4.72	-26	-0.000
Health	-4.19	-29	-0.000
Protection	-4.89	-29	-0.000
Participation	-3.86	-29	-0.001

Tab 3

The table shows that there was a significant difference in the scores for all categories between the pre- and post-tests ($p < .05$). This means that playing our game had a positive effect on the children's knowledge of child rights[4].

Qualitative Results

We used thematic analysis to analyze the qualitative data from the questionnaires and interviews. We used NVivo software to code and categorize the data into themes and subthemes. The results are presented in narratives and quotes below.

The main themes that emerged from the qualitative data were:

- Enjoyment: The children expressed that they enjoyed playing our game and found it fun and engaging.
- Learning: The children reported that they learned new facts and concepts about child rights from our game.
- Empathy: The children indicated that they felt empathy for the characters in our game who faced different challenges related to child rights.
- Motivation: The children stated that they felt motivated to take action for child rights after playing our game.

Some examples of quotes from the children are:

- "I liked the game because it was fun and interesting. I liked the quiz part because it tested my knowledge and I learned new things. I also liked the simulation part because it showed me how different children live in different situations."
- "I felt sad for the girl who had to work instead of going to school. I think every child has the right to education and to play. I wish I could help her somehow."
- "I learned that child rights are important and that we should respect them. I also learned that some children don't have their rights and that we should do something about it. I want to join a club or an organization that works for child rights."

Discussion

Interpretation of Results

The results of our study show that our game project on the topic of child rights using Python was successful in achieving its aims. Our game was able to raise awareness and knowledge about the rights of children around the world, as well as to empower and engage children in claiming their rights and participating in decisions that affect them.

The quantitative results show that there was a significant increase in the children's knowledge of child rights after playing our game, as measured by the pre- and post-tests. This indicates that our game was effective in conveying the facts and concepts of child rights based on the UNCRC. The qualitative results support this finding, as the children reported that they learned new things from our game[2][3].

The qualitative results also show that our game was able to stimulate curiosity, creativity, and critical thinking among the children, as well as to foster empathy, collaboration, and civic engagement. These are some of the skills and competencies that Gee (2007) identified as essential for the 21st century. The children expressed that they enjoyed playing our game and found it fun and engaging. They also indicated that they felt empathy for the characters in our game who faced different challenges related to child rights. They also stated that they felt motivated to take action for child rights after playing our game.

These results suggest that our game was able to achieve the goals of games for learning and social change, as proposed by various scholars(Klopfer et al., 2009; Squire, 2011; Salen et al., 2011). Our game was able to create an immersive and interactive environment where the children could develop their knowledge, skills, and attitudes towards child rights. Our game was also able to convey complex and sensitive topics in an accessible and engaging way, such as human rights, democracy, peace, and justice.

Implications of Results

The implications of our results are twofold: theoretical and practical. On a theoretical level, our results contribute to the existing literature on games and child rights by providing empirical evidence of the impact of games on child rights outcomes. Our results also support the theoretical frameworks for designing games for learning and social change, as well as for designing games for impact.

On a practical level, our results have implications for various stakeholders involved in child rights education and advocacy, such as educators, parents, policymakers, NGOs, etc. Our results suggest that games can be used as a powerful tool for promoting and protecting child rights in the digital realm. Games can be used to educate and inspire children about their rights, as well as to empower them to claim their rights and become active agents of change in their communities and beyond.

Limitations of Results

However, we acknowledge that our results have some limitations that need to be addressed in future work. Some of these limitations are:

- Sample size: We conducted our study with a small sample of 30 children from a local school. This limits the generalizability and scalability of our results. We recommend conducting further studies with larger and more diverse samples of children from different backgrounds, cultures, and contexts.
- Data collection methods: We used pre- and post-tests, questionnaires, and interviews to collect data from the children. These methods have some drawbacks, such as social desirability bias, recall bias, or interviewer bias. We recommend using more objective and reliable methods to collect data from the children, such as observation, eye-tracking, or physiological measures.
- Data analysis methods: We used descriptive and inferential statistics to analyze the quantitative data, and thematic analysis to analyze the qualitative data. These methods have some limitations, such as assumptions, errors, or subjectivity. We recommend using more advanced and rigorous methods to analyze the data, such as multivariate analysis or meta-analysis.

5. SCREENSHOTS

5.1 Game 1(Word Hunter)

Starting Window:

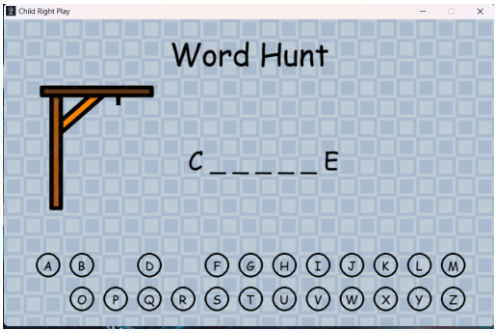

Fig 2.1.1

Game Play:

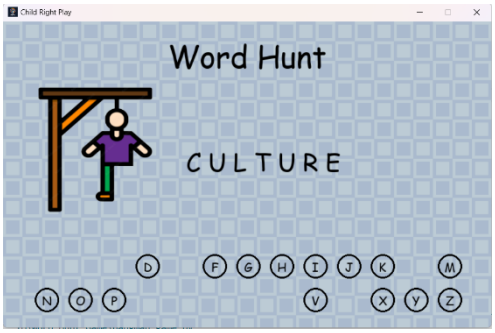

Fig 2.1.2

Game End(Won):

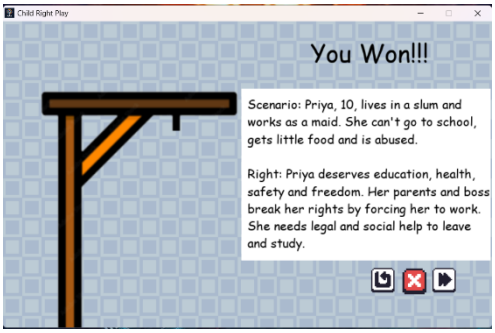

Fig 2.1.3

Game End(Lost):

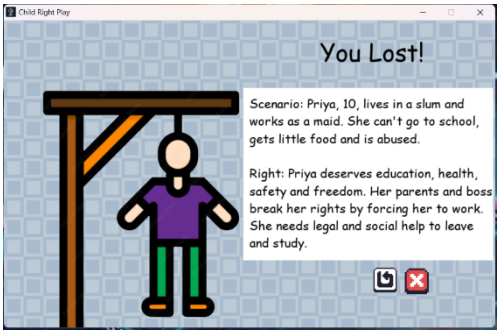

Fig 2.1.4

5.2 Game 2(Don't Touch my Ring)

Starting Window:

Fig 2.2.1

Game Play :

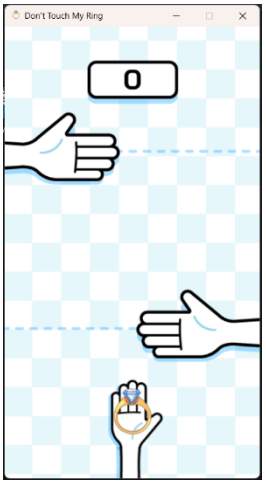

Fig 2.2.2

Game End :

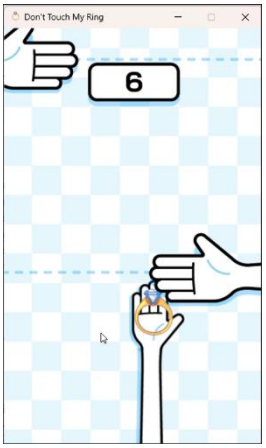

Fig 2.2.3

6. CONCLUSION

In this paper, we have explored the potential of games as a tool for promoting and protecting child rights in the digital realm. We have developed and presented our game project on the topic of child rights using Python, which consists of three main parts: a quiz, a simulation, and a report. Our game aims to raise awareness and knowledge about the rights of children around the world, based on the United Nations Convention on the Rights of the Child (UNCRC). Our game also puts the player in the shoes of a child who faces different scenarios related to child rights issues, such as education, health, protection, and participation. Our game provides feedback and resources for further learning at the end of each session.

We believe that our game project contributes to the existing literature on games and learning, as well as to the field of child rights education and advocacy. We hope that our game will inspire and empower children to claim their rights and become active agents of change in their communities and beyond. We also hope that our game will encourage other researchers and educators to explore the possibilities of using games for social good.

However, we acknowledge that our game project has some limitations and challenges that need to be addressed in future work. For example, we have not tested our game with real users or evaluated its impact on their learning outcomes and attitudes. We have also not considered the ethical and practical issues that may arise from using games to address sensitive and complex topics such as child rights. Furthermore, we have not explored how our game can be adapted or customized to different contexts and cultures where child rights may vary or be contested.

Therefore, we suggest some directions for future research and development based on our game project. First, we recommend conducting user testing and evaluation studies to assess the usability, effectiveness, and appeal of our game among different target groups, such as children, teachers, parents, and policymakers. Second, we recommend exploring the ethical and social implications of using games for child rights education and advocacy, such as how to ensure informed consent, privacy, safety, and inclusivity. Third, we recommend investigating how our game can be modified or localized to suit different cultural and linguistic settings where child rights may have different meanings or interpretations.

In conclusion, we have demonstrated how games can be used as a powerful tool for learning and social change in the context of child rights. We have presented our game project on the topic of child rights using Python, which is an interactive and educational game that aims to raise awareness and knowledge about the rights of children around the world. We have also discussed the limitations and challenges of our game project, as well as some suggestions for future work. We hope that our paper will inspire further research and innovation in the field of games and child rights.

FIGURES

TABLES

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