

A Qualitative Exploration of How Children and Parents Experience and Structure Disengagement from Games

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Disengagement from games can be challenging for players, and various attempts have been made to provide parents¹ with the tools to limit children's playing time. However, little is known about how children experience disengagement, and how children and parents jointly navigate the process of exiting a play session. To address this gap, we conducted semi-structured interviews with 25 participants, including 13 children (ages 4–9) and 12 parents. Through Thematic Analysis, we show that children – like adults – struggle to exit play if they have not yet reached a point of closure and are unsatisfied with their experience. At the same time, parents experience frustration when establishing limits, and many found it difficult to account for the state of a play session. On this basis, we highlight the relevance of disengagement-friendly game design and mediation strategies, and provide recommendations for children's disengagement from play sessions while protecting their player experience.

CCS Concepts: • **Human-centered computing** → **Empirical studies in HCI**; • **Applied computing** → **Computer games**.

Additional Key Words and Phrases: Children, Disengagement, Player Experience

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1 Introduction

Digital games are a widely enjoyed leisure activity [81], with over 90% of children older than two years engaging in regular play for 1.5–2 hours daily [5]. In this context, concerns about children's playtime persist [3, 27], particularly as the immersive nature of games can make it difficult for players to regulate engagement [13, 14, 67, 78], a challenge which is especially pronounced for younger children, who are still developing self-regulation skills [21, 56]. Previous research has explored the role of parental mediation [16, 67, 87, 89] and tools to support parents wishing to limit their children's playtime [8, 45], predominantly focusing on parents' perspectives and strategies. Addressing the case of younger children at preschool and elementary school age, research shows that parents play an active role in managing playtime [18, 20, 80], often relying on restrictive mediation strategies [83]. Here, Read et al. [67] provide anecdotal evidence of parental mediation leading to conflict, and Shalani et al. [74] highlight that parents face challenges in balancing play

¹For readability, we use the term parents to refer to any adult who may be the main responsible caretaker for a child. This can be the biological or adoptive parents, or the legal guardians involved in the care.

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monitoring with other responsibilities. Parental mediation research often prioritizes play duration over disengagement [75], focusing on how long children play rather than how they transition out of play and respond to parental intervention. Similarly, studies on parental mediation strategies [49] emphasize monitoring and regulation while technological solutions actively support restrictive approaches such as imposing system-side time limits at which play automatically ends [34].

However, little is known about how children experience the process of disengagement from games, and how it is shaped by their parents. Here, research exploring how the peak ends of play impact player experience among adult players highlights the importance of the final moments in a play session for overall player experience [41]. Additionally, work addressing disengagement among adults [6] suggests that player autonomy, satisfaction and a sense of closure at the point of disengagement are relevant for a positive disengagement experience, which may be difficult to reconcile with restrictive mediation strategies that reduce children's agency at the end of a play session.

This is a missed opportunity for Human-Computer Interaction and games research to better understand children's disengagement from games, and to contribute to the design of games that support positive disengagement experiences by exploring disengagement as a process that is jointly shaped and experienced by children and parents.

To close this gap in our knowledge, we raise the following two research questions:

RQ1: How do children and their parents experience disengagement from games?

RQ2: What strategies and routines do children and parents adopt to navigate the process of disengagement?

We address these questions through semi-structured interviews with children of preschool and elementary school age and their parents that focus on disengagement from games, involving a total of 25 participants (13 children aged 4-9, 12 parents). We apply Reflexive Thematic Analysis [24, 25], and we craft two main themes, *The Complex Emotional Experience of Disengagement from Games*, and *Children's Disengagement Processes are Shaped by the Pull of Games, Parental Intervention, and Negotiation*. Our results show that disengagement from games is an emotionally complex process for both children and parents, which is shaped by parental intervention, impacted by social dynamics, and dependent on game features: Children often struggle to stop playing, particularly when they have not reached a point of closure, leading to frustration among both children and parents at the end of a play session. At the same time, parental understanding of choosing a point of disengagement that aligns with in-game progress is limited, potentially increasing children's difficulty to disengage, highlighting the need for parental mediation strategies that take into account game features and the state of play, which needs to be supported by disengagement-friendly game design.

Our study makes the following **three main contributions**: (1) We provide the first structured exploration of how children and parents experience children's disengagement from games. (2) We show that negative disengagement experiences are the result of a three-way mismatch between children's perspectives on play, parental mediation strategies, and characteristics of games. (3) We provide recommendations for structuring children's exit from a play session in a way that protects their player experience, and we highlight opportunities for disengagement-friendly game design.

2 Related Work

This section examines engagement and disengagement in games, and summarizes existing strategies to support children's disengagement.

2.1 Engagement and Disengagement in Games

In the context of games research, engagement is typically understood as players spending time with a game, i.e., interacting with it over a certain period of time in the context of a play session. In wider HCI research, there have been some attempts to formalize this process. According to O'Brien and Toms [62], engagement is defined as a quality of user experience involving focused attention, intrinsic motivation, and a sense of control, structured into a cyclical process that encompasses the point of engagement, (continued) engagement, disengagement, and, at some point, re-engagement. This process is dynamic, with users transitioning between stages based on factors such as novelty, challenge, feedback, and usability [62]. Thus, engagement extends beyond simple usage, requiring users to invest their time, focus, and emotional energy into the interaction [10]. In games, this is, for example, related to a state of immersion in which players are emotionally involved and actively participating in gameplay [6].

Overall, **a large share of games research is invested in sustaining and increasing player engagement**, for example by exploring the role of game updates introducing fresh content [31, 90], challenges fostering satisfaction [39], and features enhancing the overall player experience (PX) [9, 59]. This also aligns with the gaming industry's reliance on engagement to boost profits through subscriptions, customer retention, and regular content [12, 28, 69]. This is closely linked with manipulative design strategies or *deceptive patterns* to retain players, particularly through psychological mechanisms that sustain attention and prolong play [32]. Here, research has shown that many mobile games targeting children introduce features that subtly encourage continued play, such as offering advertisements to skip waiting times or implementing lock-in mechanisms that make ending the game difficult [73]. Additionally, there are children's games that incentivize daily logins by rewarding consistency and penalizing missed days, fostering a sense of obligation [1, 76]. Likewise, countdown timers and limited-edition items exploit fear of missing out (FOMO), potentially pressuring young players into purchases or prolonged playtime [1].

Here, **relatively little research has explored disengagement**, defined as "*a pause or cessation of use*" [61], and ultimately a goal of parental intervention when enforcing time limits. Existing research on disengagement has primarily focused on adult users. The work of Alexandrovsky et al. [6] examined disengagement experiences among adult players, highlighting positive exits as those marked by closure, meaningful progress, and agency, while negative exits arise from frustrations like game crashes or social pressure in multiplayer games, where external expectations undermine personal choice and control. Neutral exits stem from boredom, offering a natural pause. [6]. Focusing on children and early adolescents, a study by Baughan et al. [13] involved 17 children (ages 8–13) who regularly play Roblox or Minecraft in interviews and observations. Researchers explored how children experience cognitive absorption during gameplay, but also allude to disengagement. Findings revealed that children often lose track of time, ignore external interruptions (e.g., parental calls), and overlook internal cues like hunger or tiredness while deeply immersed [13]. Additionally, there has been anecdotal evidence suggesting that children's disengagement from games may warrant further research. For example, parents reported meltdowns and conflicts over turning off games, often using physical or network restrictions to enforce disengagement, highlighting the need for better design solutions [67].

Developing a better understanding of children's disengagement from games is especially relevant given that **children's cognitive development is ongoing throughout childhood and adolescence**, with self-regulation skills (e.g., managing impulses [46, 68], maintaining attention [15, 40], and understanding time [77]) only developing gradually across early and middle childhood as executive functions mature and neural systems involved in planning, inhibition, and attentional control become more integrated [55, 68, 72]. This also suggests that children's ability to regulate

playtime is different from that of adults, with children requiring more support, for example, by means of parental moderation, which we discuss in the following section (see Section 2.2.1).

Children's cognitive development also has implications for problematic play, i.e., *gaming addiction* or *overuse of games* that interferes with other areas of life, such as social relationships or academic performance [54, 79]. Here, previous work has highlighted that deceptive design strategies in particular put young players at higher risk of developing unhealthy patterns of play [70]. Work involving adolescents has also highlighted the fine line between intensive play and addiction [79], which the research community has previously viewed through the lens of harmonious and obsessive passion [50, 66]. Overall, while an important challenge in the context of establishing a healthy relationship with games, we want to be clear that our work does not explicitly address pathological play that often occurs alongside other issues [37], but instead focuses on day-to-day challenges that arise regarding children's disengagement. Here, previous work has highlighted the importance of parental mediation as a preventative measure [91], which we discuss in the following section.

2.2 Supporting Children's Disengagement from Games

Previous work has explored children's disengagement from games through the lens of parental management of children's media use, and the provision of tools to support management of playing time.

2.2.1 Parental Mediation of Children's Media Use. Parental mediation of children's engagement with media has predominantly been studied through the lens of *parental mediation theory*, which originated in television research and explores how parents manage their children's media use, with the goal of better understanding the relationship between mediation style and children's routines and habits regarding media use [30, 49].

It initially differentiated between three main strategies of parental mediation: **restrictive mediation**, which involves setting rules and limits on screen time, content, and activities such as purchases or interactions [14, 17, 18, 30, 49, 89]; **active mediation**, which includes discussing media content and providing guidance [14, 18, 30, 49, 84, 89]; and **co-use**, where parents and children engage with media together to foster shared experiences [14, 18, 30, 84, 89]. Later, a fourth approach, **participatory learning**, emerged to address the growing complexity of digital media, emphasizing collaborative skill development and exploration of digital platforms between parents and children [30, 89]. While these traditional categories provided a foundational framework, they did not fully capture the complexities of interactive media use, particularly gaming. Consequently, the framework expanded to include additional strategies that reflect modern digital interactions [18, 49]. These include **technical mediation**, which entails using tools like parental controls to monitor, filter, or restrict media use [14, 18, 84, 89]; **distant mediation**, focused on promoting self-regulation and autonomy while maintaining parent-child communication through the use of parental controls [18, 89]; and **support for self-regulation**, which aims to build children's resilience and skills for managing online risks through guidance and dialogue [18, 84, 89]. Parents dynamically combine strategies, adapting them based on the child's behavior, developmental needs, and family context to manage children's digital media use [18].

For example, Beyens and Beullens [16] found that parents employed a combination of mediation strategies to guide children's tablet use, with restrictive mediation being applied more frequently than active mediation and co-use, and while being effective in terms of reducing time of use, also leading to more child-parent conflict. Instead, co-use was associated with less parent-child conflict, but was less common. Therefore, encouraging parents to engage in more co-use when their children are using the tablet could be beneficial [16].

In terms of parental involvement and attitudes toward children's media use, further research suggests that parents with negative attitudes toward media effects tend to exert more control and restrict their children's media use compared to those with more positive attitudes [58]. Additionally, there is research that suggests parents may also have their own motives in mediation of media use, with Covolo et al. [33] suggesting that parents commonly use devices as "*pacifiers*" to manage challenging behaviors or help with household tasks, offering a quick solution for maintain peace or gain time for other tasks [33].

Specifically examining parental mediation of gaming behaviour, a study by Jiow et al. [49] presents interviews with 41 parent-child dyads, focusing on adolescents aged 12–17 who played first-person shooters or MMORPGs. It explored how parents use a dynamic combination of four key mediation activities—gatekeeping, discursive, investigative, and diversionary activities—to manage their children's gaming. This approach highlights the flexibility of parental strategies, adapting based on factors like the child's behavior, personality, and the parent's lifestyle. However, the study did not explore broader family dynamics or parental mediation, and children's perspectives on the effectiveness of these strategies were not fully investigated [49]. Another study by Zaman et al. [89] revealed the dynamic and context-dependent nature of these strategies, shaped by factors like family routines, device accessibility, and parental beliefs. However, the research primarily centered parental perspectives, with limited focus on children's agency and interpretations during mediation processes. Likewise, Smith et al. [75] focus on how parental mediation strategies—restrictive rules, conversational engagement, and monitoring—shape gaming behaviors in adolescents aged 12–20. However, parental mediation of younger children's gaming behavior remains underexplored.

2.2.2 Game-related Tools to Manage Playing Time. Since parents play a key role in managing children's playtime [19], research and industry have introduced tools like parental controls to support screen time regulation [18], particularly in games designed for continuous engagement [48]. These include timers [44], usage trackers [38, 52], automated nudges [64], and self-regulation apps [53]. Child-focused solutions, such as Net Nanny [71], CYBERSitter [60], and platform filters like Netflix and Apple's ScreenTime², offer content restrictions and usage reports. However, abrupt enforcement can lead to frustration [78, 84]. To address this, alternative strategies have been proposed, such as ambient displays that help children and parents track playtime [86] or games with predefined durations [65], though these remain untested. However, these approaches often result in frustration and conflict between parents and children due to their abrupt nature [78, 84].

Overall, there remains a research gap regarding children's experiences of disengaging from games and the experiences and mediation strategies of parents as well as the development of better tools to support disengagement from games, particularly in the context of younger children. Our research makes a first step toward addressing this gap through an interview study that explores pre- and elementary school aged children's and parents' perspectives on disengagement from games.

3 Interview Study: Children's Disengagement from Games

To examine how children and parents approach disengagement from games, we conducted a qualitative study using semi-structured interviews. Below, we outline the interview methodology, and we comment on participants and procedure, data analysis, and author positionality.

3.1 Methodology

We employed semi-structured interviews, an approach that was chosen because of its flexibility in capturing rich, detailed narratives, enabling participants to share their lived experiences [4, 85]. Additionally, interview protocols are particularly suited for working with children and their parents.

²<https://support.apple.com/en-ca/HT208982>

Ethical considerations are fundamental when conducting research involving children. In this study, creating a safe and reassuring environment for both children and their parents was a priority. Parents were asked to be present during interviews to ensure children's protection, as recommended in ethical guidelines for qualitative research involving children [43]. However, this arrangement posed challenges, including potential power imbalances between parents and children and issues of privacy and confidentiality [42]. Here, tailoring questions to align with children's age and interests and thoughtfully navigating parent-child dynamics during interviews is important [43]. In the current study, the interviewer actively worked to reduce power imbalances, support children's autonomy, and adapt the process to accommodate their needs. The interview guide was developed along previous work that explored disengagement from games among adult players [6], with adjustments being made for the guide to be suitable for children, and to reflect the context in which children engage with games (e.g., presence of siblings, and role of parents in the disengagement process). Here, we also developed specific questions to examine parents' perspectives on disengagement, active involvement. The guide includes questions such as "*Can you think of the last time that you played [favorite game]? How did it feel when you had to stop playing?*" and "*Was there something in the game that made stopping difficult? If so, what was it? Was there something in the game that made it easier? If so, what?*" addressing children, then following up with questions such as "*Do you set time limits? If so, how, and how are they enforced?*" with parents. We made an effort to always prioritize the child's perspective by addressing them first. Interviews were designed to last about 30-40 minutes to account for the attention span of young children [35]. Initially, we also included the SAM Scale [22], but excluded it from analysis because despite the alleged suitability for children, most participants in our sample struggled to interpret the pictures. The full interview guide is included in the supplementary materials of this work. During the analysis phase, parental involvement was closely examined, and its influence was considered when interpreting and reporting the findings.

3.2 Participants and Procedure

Participants were recruited via social media platforms such as Facebook, LinkedIn, and snowballing via parenting-focused groups on WhatsApp, as well as through school newsletters and participant referral methods. All participant pairs (children and parents) were offered 30€ in remuneration for their participation, and interviews lasted between 30 and 40 minutes. In total, our study included 25 participants; 13 children aged 4 to 9 years (mean age = 6.23 years, SD = 1.62 years; six boys, seven girls) and 12 parents. The majority of children reported playing on tablets and consoles (e.g., Nintendo Switch, PlayStation), with a smaller number using mobile phones or PCs for gaming. Their favorite and regularly played games reflected a wide range of interests, including creative sandbox games (e.g., Minecraft, Roblox), action-adventure titles (e.g., Zelda: Tears of the Kingdom, LEGO Star Wars), social simulation games (e.g., Animal Crossing, Toca Boca), competitive games (e.g., Fortnite, FIFA 23), and casual games (e.g., Pixel Art, Makeup Game). In contrast to their children, most parents only had limited gaming knowledge; a small number of parents in our sample could not name or describe any of the games their children played, and referred to them at this stage of the interview.

Interviews were conducted both in person and online to accommodate participants' preferences. The interviews took place over the course of several months, wrapping up in late 2024. Interviews were conducted in Arabic (6), German (4), and English (3), depending on participants' language preferences, ensuring they could express themselves comfortably. See Table 1 for a summary of participant details.

At the beginning of the interviews, parents provided informed consent in writing, and children were asked for oral assent after the interview study was explained in age-appropriate terms.

Then, the conversation started gently with questions about the child's favorite games and their gaming habits, creating a comfortable and engaging environment. This was followed by exploring their experiences with ending play, and parents were later invited to share their perspectives and strategies in a respectful and open manner. At the end of the interviews, participants were given room to ask questions and thanked for their time. Overall, interviews aligned with the protocol outlined in the interview guide (see supplementary materials). The research protocol was approved by the Karlsruhe Institute of Technology (KIT) ethics board.

Child ID	Age	Gender	Games	Platform	Parent ID	Parent attended	Gaming experience
C1	5	Boy	Sonic, Craft City Lucky ("Craft Luck")	iPad	P1	Mother	None
C2	6	Girl	Roblox, My Talking Angela, Slime Rancher, It Takes Two	Mobile, PS5	P2	Mother	Past Gamer
C3	4	Girl	Makeup Game, Earth Ball, Tic-Tac-Toe	iPad, Mobile	P3	Mother	Casual Gamer
C4	7	Boy	Fortnite, Minecraft, League of Legends	Switch, PC, Mobile	P4	Mother	None
C5	7	Girl	Roblox, Pixel Art, Toca Boca	iPad	P5	Mother	None
C6	7	Girl	Falafel King, Toca Boca, Parkour for Obby	iPad (gift)	P6	Mother	None
C7	6	Boy	Fortnite, Roblox, LEGO Star Wars, Minecraft	Switch, Father's phone	P7	Mother	None
C8	6	Girl	Minecraft, Animal Crossing	Tablet	P8	Mother	None
C9	4	Boy	Roblox, Fortnite, Minecraft, Lego Star Wars, Mario Kart	Switch	P9	Father	Gamer
C10	9	Girl	Minecraft, Animal Crossing, Just Dance	Switch, iPad	P10	Mother	None
C11	9	Boy	FIFA 23, Fortnite, Minecraft, Animal Crossing, Mario	Switch (family)	P11	Mother	None
C12	7	Boy	Lego City Undercover, Zelda, Animal Crossing, Mario Kart	Switch (family)	P11	Mother	None
C13	4	Boy	Mario Kart, Pinball, Elephant Game	Tablet	P12	Mother and Father	Mother = None Father = Casual Gamer

Table 1. Participant Information Linking Parents With Their Children and Giving an Overview of Gaming Preferences and Experience. One Parent (P11) Participated With Two Children. For one child (C13), both parents attended (P12).

3.3 Data Analysis

Data were analyzed following Reflexive Thematic Analysis by Braun and Clarke [24, 25]. We opted for this approach because of its flexibility and suitability for lived experience accounts, making it particularly suitable for unpacking the nuanced dynamics of disengagement.

The analysis process aligned with Braun and Clarke's six-step process [23, 25]. It began with a thorough familiarization process by the main researcher. All interviews were transcribed, and each transcript was carefully reviewed multiple times. During this stage, the main researcher took detailed notes to capture initial patterns, insights, and recurring ideas.

Next, the main researcher engaged in systematic coding, following an inductive approach. Each transcript was read, and statements were assigned initial codes against the backdrop of the research questions. For instance, statements like, *"There is no specific time, but as a maximum, the internet is*

disconnected at 9 pm, at bedtime." were coded under *Parental Mediation*, while phrases such as, *"I play mostly on weekends,"* were coded as *Structured Playtime*.

Once initial codes were generated, they were revised across transcripts and grouped into broader categories based on shared meanings and relationships. This step resulted in the development of preliminary themes. For example, the codes *Parental Mediation* and *Structured Playtime* were clustered together under the broader theme *Children's Disengagement Processes are Shaped by the Pull of Games, Parental Intervention, and Negotiation*.

The resulting themes were then reviewed within the research team. This involved cross-checking themes and codes against raw data to maintain consistency and coherence.

Following this step, final themes were crafted, and sub-themes were developed to capture specific aspects within the broader themes. Review and discussion within the research team resulted in two main themes: *The Complex Emotional Experience of Disengagement from Games* and *Children's Disengagement Processes are Shaped by the Pull of Games, Parental Intervention, and Negotiation*.

3.4 Positionality

Within qualitative research in general and in the context of interpretative and reflexive analysis in particular, researcher positionality is relevant for interpretation of findings. Our research team brings diverse academic backgrounds and lived experience of disengagement from games. We have expertise in Human-Computer Interaction (HCI) and psychology, which informed our approach to studying children's disengagement from games. All team members have personal experience with gaming. One researcher is a parent, which offered a unique perspective by observing disengagement through their child's gaming experiences, but also led to personal reflection on family routines. While the other team members do not have children, they each have children in their lives, such as nieces, nephews or cousins, which provides additional insights into how children engage and disengage with games. Additionally, some researchers have faced personal challenges in disengaging from games, for example, setting a goal to play for an hour but losing track of time, as the game's engaging nature made stopping difficult, often stretching one hour into several. As a team, we also want to be transparent in that we view gaming as a positive activity, recognizing its potential to foster creativity, learning, and emotional growth. However, we also acknowledge the risks posed by exploitative game design strategies, particularly in relation to children's experiences. Therefore, we believe that it is important to design games that provide enriching and enjoyable experiences, but that also support both children and their parents in transitioning away from the game, supporting positive disengagement.

4 Results

In this section, we present two main themes from the analysis, (1) *The Complex Emotional Experience of Disengagement from Games* which maps onto RQ1, and (2) *Children's Disengagement Processes are Shaped by the Pull of Games, Parental Intervention, and Negotiation* which maps onto RQ2.

4.1 Theme 1: The Complex Emotional Experience of Disengagement from Games

The emotional experience of disengagement from games is complex for both children and parents, marked by a blend of frustration, moments of tension, and relief. Here, we first present children's emotional responses to disengagement, then we examine parents' emotional experience.

4.1.1 Sub-theme 1: Children's Emotional Responses to Disengagement. The emotional journey children experience when disengaging from gaming is complex, and entails distinct differences depending on whether a child stops playing at their own volition or when there is parental

intervention. Voluntary disengagement is often driven by boredom or frustration with in-game challenges.

In contrast, when disengagement is initiated by parents, our results suggest that children may experience sadness and frustration, but also resentment, which is further complicated if play takes place in a social setting. In the following, we examine the emotional experience of children when disengaging from games in more detail.

Where boredom was a driver of self-initiated disengagement, children described how they naturally lost interest when games lack novelty or became repetitive. For instance, one child explained, *"I stop when I get bored [...] Sometimes there's nothing new to do in it, and then it gets boring"* (C2). One child remarked, *"There are more game options in Roblox! Pixel Art is just coloring; I get bored of it sometimes,"* (C5), offering an example of how doing the same activity repeatedly can result in boredom. Another child shared that *"If bad guys show up and I lose, I get bored. I like games where I don't lose."* (C1), suggesting a relationship between engagement and in-game performance, also the combination of a lack of novelty and repeated failure can ultimately prompt the child to disengage. With respect to performance, another child explained *"Hmm, when I played a puzzle game, I got a bit grumpy because I couldn't solve a level. I decided to quit on my own and do something else."* (C8), illustrating how mild frustration with a difficult challenge can lead to voluntary disengagement. This highlights that frustration with challenges may also prompt children to stop playing on their own, which is in line with research on player attrition [11]. Overall, we note that this type of disengagement was not associated with strong expression of emotion, but rather led to gradual and subdued disengagement from the present game.

However, there were instances in our data where frustration was apparent, in particular, when children felt that gameplay was suddenly interrupted. For example, one child shared, *"Sometimes, and to a lesser extent, I get frustrated if I have just a little bit left to do! But I can redo it tomorrow,"* (C5), indicating how the ability to resume play later helps children manage their frustration and disengage more calmly. She also shared, *"That people come and destroy what I built before I finish. I want to finish and leave the game comfortably,"* highlighting frustration when her progress is interrupted and expressing a desire for closure that was also observed among adult gamers [6]. Another child remarked, *"With Lego City and Dark Rover, I want to finish the mission because it's annoying if you don't save and have to start over,"* (C12), expressing frustration with having to stop mid-mission, as it disrupts progress and forces them to repeat tasks. While most cases of frustration remained manageable, extreme reactions were rare but notable. One parent described their child's intense response during high-stakes or social play, sharing, *"He has broken five screens so far,"* (P4), illustrating how emotions can escalate to physical outbursts when asked to stop.

Similarly, disappointment and resignation emerged in response to parental intervention. For example, one child expressed a sense of resignation, stating *"It's like, what's the point? I can't win if I have to stop all the time,"* (C12), revealing the emotional toll of what the child perceived as frequent interruptions. They further explained, *"Yeah, and it's like, I only had the chance to either turn it off or try to crack the control,"* (C12), highlighting their frustration with timers interrupting the game and removing their control over disengagement. This highlights the child's struggle to reconcile their disappointment with an understanding of the imposed limits. Another child expressed a similar struggle disengaging during engaging periods of gameplay, saying, *"Yes. Minecraft, for example, when I've found diamonds in a cave, monsters are chasing me and want to kill me, and I've grabbed the diamond and need to get out,"* (C11). Likewise, expressions of sadness were associated with children being asked to stop playing when there was no closure in gameplay, for example, if they have to leave tasks incomplete. Here, one child shared, *"Mom always says I play too much. I get sad because I want to keep going"* (C10), highlighting the emotional interruption to her enjoyment and sense of fulfillment. In some cases, sadness was compounded by the experience of removal of agency and

concern over a loss of control when parents physically intervened. For example, one child shared that *"I get sad when my mom stops me from playing. It's not fun when she takes the phone away. She's in control, not me,"* (C2). She further explained made reference to closure and performance, *"You could let me start again at the same spot where I stopped last time. I don't want to start the whole level over! That's not fair! I also don't want other people to be ahead of me when I come back."* reflecting feelings of concern about being left behind.

Social obligations and relationships complicated the emotional experience of disengagement further. Here, one child remarked, *"I think sometimes it is more difficult when it is playing with friends... because one of the friends might have only just joined,"* (C7), illustrating how the experience of leaving peers behind can make disengagement even more challenging. This was also relevant for co-located play, e.g., one child questioned, *"Just me? Isn't my brother stopping too?"* (C1), voicing his frustration at being the only one asked to disengage. Likewise, another child's mother noted that *"She might cry and ask to stay and play with her friends"* (P6), describing her daughter's reaction when her friends were allowed to continue while she had to stop. For these children, negative emotions at the point of disengagement are closely tied to feelings of exclusion and missing shared experiences.

Finally, we want to note that not all children struggled to disengage when prompted by their parents. For example, one child affirmed that she appreciated her mother's reminders to stop playing, which she perceived as her mother supporting her in disengagement from play. This shows that some children can make a smooth transition to other activities without strong emotional reactions, however, we want to highlight that this was not typical within our sample.

4.1.2 Sub-theme 2: Parents' Emotional Journey During Disengagement. Our findings suggest that parents' emotional experience of managing their children's gaming routines is complex and multifaceted, ranging from feelings of relief to guilt, anxiety, and frustration, as they navigate the challenges of setting boundaries while supporting their child's engagement with games.

Overall, children's immersion in games lead parents to associate gaming with moments of relief, as it provided a temporary pause from the demands of daily life with children. For example, one parent noted, *"I think in a weird way, I probably sometimes feel calmer because they're occupied, and I can get on with stuff myself"* (P7). Similarly, another parent shared how gaming fits into their daily routine, and gave them space to recover, explaining, *"Her playtime is usually during my nap after school! So I can rest assured that she's not alone doing things that might hurt her and that she doesn't bother me"* (P5). Reflecting on the practicality of gaming in potentially stressful moments, another parent said *"We find it good to have peace and quiet in between, for example, when we go out to eat... It is also practical for long car journeys. And also when there is something to do at home. Or when we are cooking and he says he wants to join in but doesn't feel it afterward."* (P12).

Children being safely entertained allowed parents to focus on other responsibilities or activities, and find moments of recovery. This aligns with previous research highlighting the utility of digital devices as tools for managing household routines and providing parental respite [29, 57]. However, this experience of calm was often accompanied by feelings of guilt, with parents also expressing unease about relying on games to occupy their children. For example, one parent shared, *"So, when I am busy! I am happy that he is busy playing, but if it takes a long time, I feel guilty"* (P4), and another highlighted that *"When my daughter plays, I'm happy because she's happy and playing, but I'm also worried. I think playing too much is not good for her"* (P2), illustrating the tension between appreciating uninterrupted time for themselves and worrying about the potential impact of extended gaming sessions for their children. Another parent described this mix of emotions, explaining, *"Using games was a necessity, not my preferred choice. I really need it sometimes, but I dislike how my children feel after playing – often in a bad mood"* (P1).

During children's disengagement, irritation and concern were common responses of parents, particularly when they faced resistance from their children. One parent described this struggle, sharing, *"Most likely, she's deeply engaged in playing, and when I ask her to study for school, or it's bedtime... she might cry and ask to play more"* (P6). Another parent explained the toll this takes, saying, *"The feeling that I am forcing her to finish consumes my energy a lot"* (P3), highlighting the difficulty parents experience when trying to balance boundaries with their child's desires. Parents also expressed feelings of anxiety about finding alternative activities to ease the disengagement process. For example, one parent shared, *"It's uncomfortable and worrying. I have to provide an alternative activity"* (P1). Another parent, described the additional emotional toll of enforcing boundaries, *"I work all day and sometimes I'm too tired, so I let her cry a little"* (P2), suggesting that parents sometimes lack the energy to support their child during disengagement.

Here, some parents made a connection with game design and game mechanics, which they suspected made disengagement more challenging for their children. For example, one parent noted the difficulty of ending multiplayer games, explaining, *"Online games! Calling friends encourages them because there is interaction with friends. It is difficult for me to stop him while his friends are playing"* (P3). Another parent highlighted how the engaging nature of games contributed to this frustration, stating, *"When my daughter plays online, she gets too engaged. Sometimes I feel like the game knows how to pull them back in"* (P2). Game design features such as alerts and rewards often amplified this frustration, as one parent observed, *"The games are well designed to keep children wanting to play more"* (P7). One parent also expressed worry about the potential long-term effects of gaming, pointing out that *"I think the reward systems in these games affect the brain, and it worries me about the long-term impact"* (P10), suggesting that parents' emotional experience of disengagement was not just impacted by direct experience, but also by meta-level concerns.

Despite the challenges, our data also illustrates instances where parents experience moments of relief and accomplishment when disengagement happens smoothly or when children display self-regulation. P11 explained, *"Well, they say, oh man, already? But they do it. They do it anyway"* (P11), expressing relief when children comply without significant conflict. Another parent reflected, *"He's proud of himself"* when he manages to stop on his own (P12), demonstrating how children's self-regulation brings parents a sense of pride and emotional satisfaction. Similarly, another parent shared, *"Even if she asks for more time and I refuse, she doesn't react violently"* (P5), highlighting how smooth disengagement fosters a more positive emotional experience for parents, too. Further, there were instances in our data that show how game design can facilitate easier transitions for children.

Here, one parent shared, *"One thing that makes it easier for my daughter to stop playing is that she can start the game again in the same place where she left off"* (P6). Another shared a sense of ease with level-based games, explaining, *"It's far easier with checkpoint or level-based games where you can save at a specific point"* (P9). Collaborative games like It Takes Two also fostered feelings of appreciation, as one parent explained, *"They both need to be free at the same time,"* (P2) making it easier to end play when one child is unavailable. These features were perceived to bring a sense of control, leading to easier disengagement for children.

Overall, our data shows that children's and parents' emotional of disengagement is co-dependent, but that each party has a unique emotional journey throughout disengagement. In the following theme, we further unpack how the process of disengagement shapes disengagement experiences.

4.2 Theme 2: Children's Disengagement Processes are Shaped by the Pull of Games, Parental Intervention, and Negotiation

The process of disengagement from games is challenging for both children and parents, shaped by children's struggles to stop and parents' strategies to enforce limits. Here, we first discuss children's behaviours and strategies, and then we address parental mediation.

4.2.1 Sub-theme 1: Children's Behaviors and Strategies During Disengagement. Our data suggest that when children attempt to stop gaming independently, their actions may reflect the strong pull of gaming and the difficulty they experience in breaking away. For some children, stopping simply never happens. For instance, one child, when asked if they ever stop gaming on their own, responded, “No, never” (C4). Another child explained, “*I don't know how to stop! It is so much fun!!! I want to keep playing*” (C8), which suggests that the immersive nature of gaming may make disengagement challenging for some children. Connected with this issue, our data suggest that children have limited awareness of time while gaming. For instance, when asked if she played for a long time, one child shared, “*Not really that long. Maybe I'm not sure*” (C2), highlighting the difficulty they have in gauging how much time they have already spent on a game. For others, stopping is not about ending their gaming time but instead switching from one game to another. One child explained, “*I switch to a different game,*” (C2), and another echoed, “*Play another game.*” (C3). This behavior suggests that children often prefer replacing one game with another rather than fully disengaging from gaming.

This pattern was also observed by the parents of older children. One parent noted, “*She rarely stops using the device on her own*” (P2), while another added, “*I don't remember they stop by themselves, even if I left them for a long time!*” (P4).

In contrast, parents of younger children also described occasional natural disengagement, with one parent noting, “*Sometimes he just gets up and runs away*” (P12) and another sharing, “*There have been occasions where he will naturally finish and put it down*” (P9).

Against this backdrop, the majority of instances of disengagement in our data suggest that children's efforts focus on prolonging gaming time, but parental mediation provides the context in which children develop their own disengagement strategies.

For example, when prompted to stop, many children ignore requests or delay responding. When asked about their reactions, one child responded, “*I keep playing*” (C1), while another stated, “*Continue playing!*” (C4).

These responses illustrate the reluctance children often show to disengage without direct intervention.

Here, negotiation was a common strategy children use to extend gaming time. One child shared, “*Sometimes I want to finish the construction task that I started, so I ask mom for some extra time*” (C5), and a parent observed, “*They often come to me asking for more time to finish something*” (P2). This was supported by other children's experiences, e.g., “*I said, 'Please, can I have a little more time? I just need to finish this part'*” (C7). A parent noted, “*They ask for more time because they want to finish what they started, like a level or a task*” (P4), which relates to the importance of completing specific in-game tasks before stopping. Children's requests for more time were often emotionally charged, as one parent described: “*My children cry and ask for an extra 10 or 15 minutes! Always*” (P4) (see theme 4.1.1).

Along the same lines, one parent shared, “*They often come to me asking for more time, or they blame me because they lost the game just before winning because the app just closed*” (P2), indicating how in-game technical issues may serve as reasons to extend play.

Game design also contributed to this challenge, as one child explained, “*Not easy because it does not save*” (C7), noting how games like LEGO Star Wars, which don't save mid-level, make it harder to disengage. Additionally, one parent observed, “*It's extremely addictive because they only really feel satisfaction if they win, which doesn't happen very often... There are no checkpoints or clear stopping points*” (P9). Overall, this suggests that certain features of the games played by the children in our sample carry the characteristics of deceptive patterns (see Section 2.1).

The relevance of negotiation was likewise prominent in multiplayer settings, either locally with siblings, or online with friends. One child explained how they handled social interactions during

interruptions, saying, *"My friends try and say, 'It's too early! Why are you leaving now?' But I don't explain the reason... it's none of their business"* (C4), illustrating how children manage the tension between parental demands and ongoing social interactions in games. In relation to this, when asked which game is easier to exit, another child explained, *"Parkour for Obby is easier than Roblox, because I don't play with my friends"* (C6). This suggests the absence of social interactions may facilitate easier disengagement compared to socially engaging games. There also were exceptional instances in our data in which children attempted to avoid disengagement in multiplayer settings. One child shared, *"I run to my room and lock the door so Mama can't take the iPad while I'm still playing with my friends and haven't finished the level!"* (C6). When forced to stop, the child described leaving abruptly, saying, *"I just say bye and leave immediately"* (C6), highlighting the challenge of closure in the multiplayer scenario.

In contrast to engaging in negotiation, some children followed through with requests to disengage without delays as a result of anticipated consequences if they would not comply with their parents' instructions. For example, one child noted, *"Yes, mom gives two warnings, and on the third one, she closes the game completely"* (C5), describing a structured system of rules. Another explained, *"My mom sometimes takes away the tablet if I don't stop when she says it's time"* (C8).

This was also echoed in parents' feedback, e.g., one mother pointed out that *"He used to cry but stopped after I enforced the rule: cry and lose the next weekend's turn"* (P1). We also want to note that some children are driven by different external factors, such as the approval of their parents. For example, one child expressed her preference for stopping play independently, explaining, *"I like to finish myself. This way, I become a good and well-behaved girl!"* (C3).

Finally, when structuring their disengagement process, our results suggest that daily routines were a limitation that children understood, and attempted to structure playtime around. One child explained, *"Yes, after I finish my schoolwork, but sometimes I play a little bit before dinner too!"* (C8), indicating that gaming fits into their daily routine. Another child noted, *"I can't play on Tuesday because I have soccer practice and my brother has piano"* (C11), showing that children seem to be aware of routine limitations that affect their playtime. However, despite this understanding, there were some instances in which children still struggled to disengage.

For example, when asked to stop playing for homework or meals, one child shared, *"I just want to play a bit more. I don't want to stop now"* (C6), highlighting their reluctance despite awareness of other obligations.

4.2.2 Sub-theme 2: Parental Methods for Managing the Disengagement Process. Our data suggest that parents use a range of strategies to manage the disengagement process of their children.

Overall, daily routines and extracurricular activities played an important role. For example, one parent noted that *"I allow playing at certain times - just not during study time or when we're leaving the house"* (P6). Likewise, another parent shared, *"Stop playing if we want to go out, or someone is coming to visit us, or it's bedtime"* (P4), emphasizing how transition moments reinforce limits around play. Extracurricular activities also provided boundaries for playtime, as one parent explained: *"Definitely not early in the morning. Not before school at all. After school, yes. But [C11], for example, has canoeing and soccer twice a week. So they have to play but should go to their training sessions"* (P11). These family outdoor activities and obligations help parents balance gaming with other demands, although they acknowledge that this balancing act can be challenging.

Beyond the boundaries that are naturally set by extracurricular activities, the data reveal that some parents used pre-set rules to manage gaming time, establishing clear expectations. One parent explained, *"Clear rules like 10 or 15 minutes and playing only in the living room"* (P1). While children generally agreed to these limits, they often expressed a desire for more playtime, as her child shared when asked if he agreed to the time limit *"Yes, but I always want more"* (C1). Despite the structure,

these rules were sometimes met with subtle resistance, highlighting the tension between parental boundaries and children's desire for more freedom. Other parents adopted a similar approach, agreeing on limits with their children. One parent shared, "*We set a time limit of 30 minutes to an hour after schoolwork and agree on it together*" (P8). Despite this mutual understanding, the child of this parent subtly pushed boundaries. The child explained, "*I don't stop right away, and I play a bit longer...*" (C8), suggesting gentle resistance to the agreed limits.

Some parents also admitted that their pre-planned preparation strategies shifted depending on their mood or the situation. One parent explained, "*If I am in a good mood, I prepare her...but when I am in a hurry, it becomes difficult*" (P3), demonstrating how the rhythm of daily life for parents influences rule enforcement. Another parent acknowledged, "*But sometimes it's also that you then play a lot on the weekend and then nothing for two weeks. So it's rather irregular*" (P10), reflecting how irregular patterns in managing gaming time can create challenges in maintaining a structured approach.

Parents often diverted from regular playtime limits based on daily demands or special circumstances. On the one hand, during vacations, when routines are relaxed, parents may allow their children unrestricted playtime. One parent shared, "*During vacations, everything is allowed!*" (P5), reflecting a more lenient attitude during these periods. On the other hand, time-sensitive situations, such as preparing for dinner or leaving the house, require stricter enforcement of limits. As another parent explained, "*If it's time for dinner or we need to go out, then we stick to the time. But I have let them finish games before as well*" (P9). This flexibility sometimes lead to irregular schedules, causing dissatisfaction among children, as one child explained, "*I usually have 30 minutes on weekdays, but this time my dad gave only 20 minutes - it's so unfair*" (C12).

Providing children with time to adjust was another strategy that was used by some of the parents, so they used incremental warnings. One parent explained, "*communication and reminders are very, very important. Children need time to process that playtime is coming to an end*" (P3). Another parent added, "*It helps because they don't really have a sense of time yet, but knowing the end is approaching helps them adjust*" (P7). To implement this, parents use structured warning systems. One parent shared, "*I warn her she has five minutes left. If she doesn't stop, I remind her again, and on the third time, I turn off the device*" (P5). Children's responses to structured warning systems vary, often influenced by their engagement in the game. Some children understand and follow the cues, like one child who explained, "*Yes, mom gives two warnings, and on the third one, she closes the game completely*" (C5). However, others, like one child who replied, "*I don't know*" (C6) when asked how many alarms or warnings she usually gets, may not fully respond to the warnings due to their immersion in gameplay. Some children expressed frustration when interrupted, as one child said, "*Oh, I really don't like that. It's annoying!*" (C2). In contrast, other children adopt their own strategies, like one child who explained, "*I finish the game that I'm playing. If I still have any time left, I go back to the main menu or starting point of the game*" (C7), creating a smoother transition. To reinforce warnings, some parents used external tools like timers or alarms. One parent shared, "*We use a timer or an alarm to signal the end of game time*" (P8), while another said, "*A mobile alarm works well for both them and me*" (P3). However, one parent observed, "*Timers can be helpful, but they're not enough on their own*" (P9).

Children's perspectives on the use of external timers and warning tools varied. C7 highlighted both the convenience and drawbacks of them: "*Maybe you [referring to the parent] could use the timer because then you don't have to open it and set the time yourself, and the timer can just ring. But then, if you're in the middle of a game, it's rude*" (C7). Some children described positive experiences when they were able to set their own time limits. "*So that I eventually know how much time I need to finish a house*" (C10), suggesting that timers can serve as helpful tools providing children with a sense of structure and agency. Parents' opinions on timers were likewise mixed. For example, one

parent expressed a preference for direct communication, saying, *"No, I don't like controlling gaming duration using the Apps. It feels impersonal. I prefer to communicate directly with my son and let him set his own timer"* (P1). Only few parents in our data used monitoring software, which allowed them to enforce playtime limits remotely. One parent explained, *"Their Dad can regulate that... on the smartphone. And also see how much they've played"* (P10). However, they also shared, *"And then there's always arguments with it,"* (P10) highlighting how a lack of communication around time limits can lead to frustration and resistance from the child.

According to some parents, offering attractive alternatives provided children with a smoother transition away from gaming when playtime needed to end. One parent shared, *"If he knows that I'm stopping now and we're going to the playground, then it's not so difficult for him"* (P12), illustrating how a positive alternative can make disengagement easier. However, as another parent noted, the effectiveness of this approach can vary: *"Sometimes I suggest to stop playing and go to the Trampoline Park they love it, but they said we want to play! We went last week"* (P4). This shows that children's enthusiasm for gaming can sometimes outweigh their interest in other activities. Here, some children appeared to be more open to ending a gaming session when a familiar or enjoyable alternative was available. One child suggested, *"We could play with Lego then"*, (C1). Another child reflected on how other interests shaped his disengagement process: *"Because I like reading so much, I would just probably go to reading"*, (C7). This suggests that transitions are eased when children have meaningful alternatives - whether offered by parents or based on children's personal preferences.

When alternatives were insufficient or time-sensitive commitments arose, some parents adopt more abrupt strategies to enforce limits. One parent explained, *"I turn off the internet and don't allow long discussions! Because my son is very, very nervous. If the discussion gets heated, he breaks things"* (P4), emphasizing a swift approach to avoid emotional escalation. Another parent shared, *"If it's been a very stressful day, then you know asking them to stop is gonna escalate things even further"* (P7), showing the urgency of halting gaming sessions in stressful situations. Similarly, another parent shared, *"If she's having a hard time stopping when the timer goes off, we enforce the limit by taking away her tablet until it's time for her to play again"* (P8), relying on external enforcement rather than engaging in conversation. While these methods may effectively end playtime at the moment, they can leave children feeling disempowered, as they lose the opportunity to transition out of the game on their own terms or engage in negotiation.

Some parents found that engaging in gaming with their children helped facilitate the disengagement process. One parent shared, *"I've done some gaming with both of them, and I would say it generally makes it slightly easier to get them off if I'm playing with them"* (P9), suggesting that being involved in the gaming experience may make it easier to transition children away from play. This involvement appears to make the child feel more comfortable or cooperative when it's time to stop. Another parent explained, *"When [C8] and I play games together, it's easier to stop playing. If we're on the same team or just having fun, [C8] is okay with ending the game so we can do other fun things"* (P8). For children, the enjoyment of co-play was also clear across several accounts. One child shared, *"I have so much fun playing with my mommy and daddy"* (C8). Another expressed pride in playing with his mother, saying, *"Yes, we play together... Me!! I always win," when describing their Tic-Tac-Toe sessions,*, (C3). Yet, co-play with parents did not support ending the game more smoothly in all cases. One child highlighted that, *"It's easier if I'm alone,"* (C6), explaining that stopping was harder because she enjoyed time spent with her dad. Another child described feeling *"unhappy"* (C11) when his father abruptly ended a racing game: *"He overtakes us and right before the finish line says stop, now it's time for bed,"* (C11). These examples suggest that even during shared play, the decision to stop may feel one-sided or poorly timed, for example, if it interferes with closure.

However, many parents in our sample did not only refrain from playing games with their children, but also expressed a lack of understanding of game features. One parent admitted, *“My little son [C4] told me about inappropriate content in one of the games that I was unaware of when he played it with his older brother, and I prevented them from playing it”* (P4). Another parent admitted to not knowing the details of a game their child played, saying, *“As for Toca Boca, I think it is completely safe, although I admit that I don’t know this game well”* (P5). This illustrates how some parents are unaware of the specifics of the games their children engage with. Similarly, unfamiliarity with game mechanics can hinder parents’ ability to connect with their children’s experiences. For example, one parent explained, *“But they’re very proud, and then I say they did a great job and ask how they did it. But I have no idea about Minecraft and how to do things there”* (P11). In some cases, even when parents take on the primary responsibility of monitoring and managing gaming time, they may lack knowledge about the games themselves. One mother noted, *“Ask her father”* (P6), indicating that while she managed the children’s gaming schedules, she relied on the father’s gaming experience for decisions about the games.

Overall, our data shows that the process of disengagement is a dynamic interaction between children and parents: Children often resisted and negotiated in an effort to maintain agency and continue playing. In response, many parents employed structured strategies such as setting timers or enforcing rules to guide transitions. These differing tactics frequently led to moments of tension, highlighting that the process of disengagement is characterized by ongoing negotiation.

5 Discussion

In this section, we first provide answers to our two research questions, highlighting key findings derived from our results. Then, we discuss the implications of our work for children’s engagement with games, and make recommendations for how to improve children’s disengagement experiences through disengagement-friendly parental mediation and game design.

5.1 RQ1: How do children and their parents experience disengagement from games?

Our results suggest that disengagement from games is an emotionally challenging process for both children and parents. For children, the experience of disengagement varies based on whether the termination of play is self-initiated or externally imposed. Self-initiated disengagement was rare and typically driven by boredom or mild in-game frustration, aligning with previous findings [13, 78]. Likewise, our findings suggest that reasons for adult players to disengage [6] apply in the context of children. However, our work highlights that children’s self-initiated disengagement from a game often causes them to move from one game to another rather than ending their gaming session altogether. From the perspective of parents, self-initiated disengagement was associated with initial feelings of relief that no intervention was needed, but this faded as children quickly re-engaged with other games.

In contrast, children’s disengagement as a result of parental intervention was associated with more intense emotional experiences such as frustration, which is also in line with findings on adults’ experiences of disengagement [6].

Additionally, children experienced negative disengagement when imposed limits were perceived as unfair, rigid, or sudden (e.g., if parents removed devices), an issue which was further complicated if games lacked features like saving progress or pausing, aspects which may be indicative of the presence of deceptive patterns [1, 67]. Likewise, in multiplayer settings, the social pressure to fulfill peer expectations while also wanting to comply with parents’ requests added complexity to children’s disengagement experiences. While many parents in our sample reported feelings of relief when gaming provided a break (also see [47, 82]), this was frequently accompanied by guilt regarding the reliance on games to occupy children, and the duration of play sessions. In turn,

parents expressed irritation and concern when children resisted stopping or reacted negatively, and extreme cases engaged in actions that suggest that they struggled to control their own emotions (e.g., removing devices or switching off the internet). In some instances, empathy further complicated this process, as some parents, especially those who were gamers themselves, understood their children's desire to continue playing. However, there were many other instances in which parents struggled to understand the strong emotional response of their child to their request to end a play session, suggesting a mismatch of children's and parents' perspectives on the emotional impact of exiting play.

5.2 RQ2: What strategies and routines do children and parents adopt to navigate the process of disengagement?

Overall, our study shows that for the fairly young children in our sample, parents played a central role in shaping the process of disengagement.

In consequence, the overwhelming amount of children's actions during disengagement was in response to parental mediation. Here, we observed that when parents initiated the disengagement process, children often attempted to protect their autonomy by negotiating for extra time, making emotional appeals, or delaying compliance when asked to stop playing, aspects which have also been observed in previous work [2]. Social contexts, such as multiplayer games or the influence of older siblings, also made it more difficult for children to end a play session. This resonates with Yalçın et al. [87], who found that older siblings reinforced gaming behaviors, and Carter et al. [26], who highlighted how multiplayer and social features made it harder for children to stop playing. In terms of parental mediation of their children's disengagement, we observed various approaches:

Only a small number of parents viewed gaming as an independent activity for which they set and enforced time limits, for example using timers. Instead, most parents relied on daily routines to set boundaries for gaming, treating games as an activity to fill the gaps in their child's schedule, while also freeing up time for their own activities and chores (see [51]). For example, they would allow their children to play until mealtime, bedtime, or until they had to leave for extracurricular activities. In consequence, there were instances where this led to tense situations with heightened emotions and abrupt measures when time limits needed to be enforced quickly and without consideration of the state of the play session (e.g., to avoid being late for the an appointment that followed, or a strict bedtime). Beyond slotting gaming into existing schedules, we also observed instances where parents sought to ease difficulty of disengagement, e.g., by offering alternative activities. Overall, only few parents were actively involved in their children's gaming experiences, and therefore also played an active role throughout disengagement. In these cases, children's experiences of transitions were smoother if parents accounted for the status of the play session, and chose a moment for disengagement that aligned with in-game events. However, this positive effect disappeared if parental decisions did not respect children's desire to experience closure at the end of the play session.

5.3 Designing for Children's Disengagement as a Co-Dependent Experience

Previous research has predominantly understood the experience of disengagement as one that emerges from a player's direct interaction with a game [6], which - in the case of multiplayer games - can be impacted by the presence of other players [36]. Here, a player's understanding of the structure of the game was integral to maintaining autonomy throughout the process of disengagement (cf. [6]). In the case of children's disengagement, players have less autonomy with parents shaping disengagement processes. Our findings suggest that there may be a mismatch between parental mediation strategies and key characteristics of games played by children in our sample: Parents we interviewed often relied on firm time limits, assuming that stopping play would be straightforward

and independent of game progression. However, this approach clashed with the experiences of the children in our study, who frequently played open-ended, objective-driven, and multiplayer games (e.g., Minecraft, LEGO Star Wars, or Fortnite, see Table 1), aligning with Van Rooij et al. [78]’s findings on persistence in endless games. Thus, from the perspective of children’s experiences, it is important that parents acknowledge the difference between games and other types of media such as TV, which come with clear end points that facilitate parental intervention [84], and adjust their mediation strategies accordingly. Our findings show that children’s positive disengagement requires a combination of parental mediation that is attentive to the state of play and game design that effectively facilitates disengagement. This calls for more nuanced game design and mediation strategies. Here, we provide concrete recommendations addressing each of the issues.

5.3.1 Recommendations for Nuanced Parental Mediation That Accounts for Children’s Disengagement Experiences. While previous work on how parents structure their children’s engagement with digital media has predominantly focused on practical strategies of mediation and moderation, the specific role of the game within this process has not yet been addressed, which is a missed opportunity for more nuanced intervention. As a first step, we propose the following three strategies that parents might wish to adopt to better guide their children’s exit from a play session: **(1) Make an effort to understand children’s games and their structure.** Given the relevance of ending a play session at an adequate point of in-game progression [6], we recommend that parents make an effort to gain basic insights into their children’s games to support the choice of adequate games for playtime available, and to better understand when to initiate disengagement (see Section 4.2.2) in a way that is mindful of children’s emotional experience of exiting play (see Section 4.1.1). For those parents who do not wish to play games themselves, aggregator websites and guides (e.g., metacritic³ or the ESRB Family Gaming Guide⁴) and video materials (e.g., publisher’s overviews or community-produced content on YouTube), or simply talking to their children about the games they play might serve as a starting point for familiarization. **(2) Avoid gaming sessions that come up against hard time limits.** As a result of interactivity, the length of a play session can be difficult to predict. Here, more flexible time limits can facilitate better disengagement experiences, e.g., providing children with a few extra minutes to wrap up a level, or conclude the active task. This requires parents to schedule gaming sessions in a way that leaves room for slight adjustment of playtime for children, avoiding gaming sessions that border on mandatory other activities (e.g., appointments away from home or a firm bedtime; (see Section 4.2). **(3) Be present throughout children’s disengagement and help them manage the emotional experience of exiting play.** Our findings show that the exit from play is emotional for children, and that parents were often frustrated when conflict arose (see Section 4.1). Here, we want to highlight the fact that children are still developing self-regulation strategies [21, 56], and we encourage parents to support the transition with patience and compassion. This includes acknowledging the child’s perspective, especially in moments of shared play, where a sudden interruption thwarts children’s agency and may feel unfair or dismissive (see Section 4.2.2).

5.3.2 Recommendations for Disengagement-Friendly Game Design for Children. We also want to acknowledge that children’s disengagement experiences not only depend on their attempts to self-regulate and appropriate parental mediation, but that they are also impacted by game design. Therefore, we make the following recommendations for disengagement-friendly game design for children, expanding upon those for adults [6] and accounting for the child-parent dynamic when play ends. **(1) Provide games with predictable session length.** Other forms of media (e.g., TV

³<https://www.metacritic.com/>

⁴<https://www.esrb.org/tools-for-parents/family-gaming-guide/>

and streaming services) indicate time requirements, something which is also attempted in the context of board games (e.g., see Ticket to Ride: Europe of Wonder [63]). We recommend that game developers and publishers measure and disclose anticipated session length, and that this information is integrated into existing rating systems such as PEGI⁵ to increase visibility for children and parents, and to allow for integration of gaming at suitable moments of the day (see Section 4.2). Additionally, games explicitly targeting young children should strive to align session length with recommendations for playtime. **(2) Make in-game progress visible to children and parents.** Our results show that parents were often unaware of in-game progress, initiating disengagement at a point of play that negatively impacted children's player experience (see Section 4.2). This is a missed opportunity for games to more clearly communicate progress, for example by means of in-game progress indicators that can also be read by non-players [65], or by alternative systems that communicate time and game progression to children and parents alike [86]. **(3) Facilitate closure and satisfaction within a single gaming session.** Particularly in open-ended games for children, efforts should be taken to facilitate closure and satisfaction within a single play session (see Section 4.1.1). Here, clear closure indicators such as visual cues or milestone celebrations can potentially reinforce awareness of progress and ease the transition out of play, which is supported by research with adult players showing that closure can enhance disengagement as a positive experience [6]. Likewise, flexible save points and autosave features can prevent progress loss. **(4) Understand and avoid deceptive design.** While disengagement-friendly game design needs to move beyond mere avoidance of deceptive design, understanding problematic patterns and their relationship with child development (see Section 2.1) and children's disengagement experiences (see Section 4.1) is necessary to avoid thwarting benefits of disengagement-friendly design strategies. In particular, temporal patterns such as grinding (i.e., repetitive and time-intensive tasks leading to small rewards [88]) may reduce satisfaction children feel at the end of a play session, and mechanisms that reduce player autonomy through interface design (e.g., the absence of easily accessible exit options [7]) can hamper children's already challenging efforts to self-regulate.

6 Limitations and Future Work

Several limitations of the current study must be acknowledged. In terms of recruitment, reaching out to families with young children proved challenging, as many parents had limited time, and some voiced concerns about their child's communication skills, or hesitations about discussing their family's gaming habits. Considering preschool children's developing verbal skills, this was also a challenge throughout the interview process, and may have affected the richness of our data: Many children provided brief responses, sometimes struggled to articulate their feelings, or had difficulty recalling disengagement experiences. The presence of parents during interviews may have further influenced children's answers, however, children's responses suggest that they discussed their experiences of disengagement quite freely. Similarly, given the sensitive nature of the topic, parents may have framed their strategies in a more positive light. Moreover, since most participating adults were mothers, the findings may reflect caregiving patterns that could be different in families where parental involvement is more evenly shared. Likewise, while our study included both children and parents, it is important to note that children's disengagement from play is not an entirely independent process. Because parents are typically responsible for setting limits and ending play sessions, children's experiences are shaped by this external regulation. This context must be considered when interpreting findings. There also was cultural diversity in our sample. Here, we want to note that despite this fact, children played the same games, and disengagement experiences and strategies reported in the interviews were comparable, suggesting

⁵<https://pegi.info/page/publishers-and-developers>

that core elements of children's player experiences may be more strongly impacted by universally shared human traits than by cultural background. However, this is an opportunity for future work to examine this facet in more detail and under involvement of larger samples from different cultures with distinctly different parenting styles. We also acknowledge that children's ability to identify specific game features influencing disengagement may be limited, as these elements are not always consciously noticed or easily verbalized. We further elaborate on how we addressed these challenges in Section 3.1, and we suggest that future work follows up on our qualitative findings through more extensive survey studies. Overall, the work presented here presents a foundation for future work that studies concrete implementation of child-friendly disengagement strategies. For example, there is an opportunity to examine how disengagement-friendly game mechanics influence disengagement experiences through lab studies of children's player experience. Additionally, future research should follow up on our findings regarding parental experiences throughout disengagement, studying whether a better understanding of their children's experiences with games can contribute to more effective moderation. Future work could also examine broader family dynamics, including which parent enforces gaming limits, the role of older siblings, and why some parents feel disconnected from their children's play. Another avenue for future research is to examine how children's ability to disengage independently might be different across age groups, and should explore disengagement experiences of older children as they transition to self-regulated play.

7 Conclusion

Playing games has become a pervasive pastime for children, but challenges with respect to embedding gaming into family life remain. Our study provides a first structured exploration to further our understanding of how children experience disengagement from games, and how interactions between children and parents shape the process of exiting a play session, highlighting the emotional, social, and game-related factors that affect this transition. In particular, our results show that negative disengagement experiences are a result of a three-way mismatch between children's perspectives on play, parental mediation strategies, and characteristics of games. To address this mismatch, we provide recommendations for structuring children's exit from a play session in a way that protects their player experience, and we highlight opportunities for disengagement-friendly game design. Overall, our work provides a foundation for the HCI games research community to further explore how to design disengagement-friendly games that support children and parents when exiting play, and we hope that our work will serve as a call to action for the design of disengagement-friendly games and the employment of nuanced moderation strategies that take children's engagement with games seriously, and help parents view gaming as an inherently valuable activity. Thereby, we contribute to ongoing discussions about designing games that respect children's player experiences, which is relevant to ensure healthy engagement with digital technologies for all.

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