

Reflecting on Successes and Challenges when Conducting Research Studies in Schools

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Abstract

While Child–Computer Interaction (CCI) research frequently reports successful outcomes, challenges and failures in studies conducted in school context are rarely examined in detail. This paper addresses this gap through a collective reflection on when and how research with children in school contexts can be considered successful, and what challenges threaten such success. Based on decades of CCI experience from fifteen researchers across multiple countries, the study used a structured, multi-phase process informed by confessional research and child-centered ethics. The analysis identifies nine aspects of success across three areas (stakeholder experience, data generation, and children’s engagement) alongside fifteen recurring challenges organised into seven areas. We also

map the relationships between successes and challenges, revealing ethically consequential tensions often overlooked in published accounts. The paper offers practical guidance, an analytical vocabulary, and a reflective method to foster more transparent and ethical CCI research in school settings.

CCS Concepts

• **Human-centred computing** → HCI theory, concepts and models; • **Social and professional topics** → Children.

Keywords

Child-Computer Interaction, Research Studies, Challenges, Successes, Schools, Children, Technology

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1 Introduction

Research in Child-Computer Interaction (CCI) and more broadly in Human Computer Interaction (HCI) has historically emphasized successful outcomes, while failures and challenges are rarely reported in detail [8, 13]. This tendency limits opportunities for shared learning, as studies seldom document what went wrong or how researchers adapted when projects did not unfold as planned. As a result, the field often lacks reflective accounts that could help others anticipate and navigate similar difficulties [17, 39, 45]. In contrast, for example, maker culture actively embraces failure as an essential component of learning [51], where mistakes are seen not as setbacks but as learning opportunities that promote reflection, deeper understanding, and skill development. However, this openness to failure is not consistently mirrored in academic reporting, where success stories dominate despite researchers' awareness that even well-designed activities can fail. Even when failures are acknowledged in the literature, they tend to be indirect or implicit. Only a small number of notable exceptions critically examine failure, for example Malinverni and Pares [31] critiqued their own choice of assessment tools in their work on full body interaction. Gaver et al. [13] analysed in detail why certain design choices failed, while Robertson et al. [43] reflected on the challenges during their design and evaluation process and considered ways to improve the research process for developing serious games for children. Specifically concentrating on failures, Rukmane et al. [45] interviewed 14 CCI researchers and found three central themes of failure: unpredictability, technology targeted for adults, and children's willingness to achieve the goal. These reflections suggest valuable learning opportunities that remain under-explored in published work.

This scarcity of detailed reporting on failures in CCI and HCI represents a missed opportunity. Greater transparency about what goes wrong, why it happens, and what is learned could strengthen research practice, improve training, and better align academic culture with the values of maker culture that already recognizes failure as central to learning and innovation. Therefore, we, a group of CCI researchers with diverse backgrounds, individually and collectively reflected on our experiences including challenges and failures, when running research studies with children and youth in the context of schools in multiple countries in Europe, Asia, and North America. We decided to openly discuss also our challenges, inspired by a confessional genre of reporting research, within which also unflattering details are included and the researcher is positioned as "a reasonable yet fallible individual" [47]. So far, CCI research lacks reports on our research practice relying on confessional genre [24] while for the improvement of our practice, such reports are valuable. Reporting of our challenges may also serve as provocations - i.e., as instruments for challenging taken for granted assumptions, surfacing controversial topics, and triggering debate - often used within the design field (e.g. [27, 44]) but less so to scrutinize our research practice (Brown et al. [3] among the few examples). By reporting on our challenges, we wish to provoke the CCI community to reflect on our practice - as reasonable yet fallible individuals.

In this paper, we ask, *When is a study with children in the school context successful, and what challenges can be identified?* Our work is grounded in reflecting on failure and we use success as a way to operationalize what was learned from our experiences. We address this question by synthesising decades of CCI research experience into a set of nine aspects of successes in three key areas, along with 15 types of challenges in seven key areas. Additionally, we identify the key relationships between aspects of successes and types of challenge. We add to the growing body of research in reporting on failures and challenges, and considering what it takes to plan and execute a successful project, to support the work practices of both young and experienced CCI researchers. We also offer the method and vocabulary used in this work as a way for others in the CCI community to reflect on their own approaches to success, and challenges encountered, in order to further develop and extend the findings presented here.

2 Related Work: CCI Aiming at Doing Better Research with Children

CCI has long drawn on social science traditions that emphasize children's participation, voice, and agency. Early work like Hart's ladder of participation [16] and child focused discussions of research ethics issues [35] highlight challenges such as managing power asymmetries and respecting dissent. Within CCI, children's participation is often mediated by adults [40], prompting research into more child-sensitive methods for assent, inclusion, and recruitment. Key themes include empowerment, representation, informed consent, ownership, and long-term impacts (e.g., [12, 22, 26]). Methodological contributions aim to support equitable participation, such as idea elicitation and ethical reflection practices [41, 42], and new methods to engage children to ensure all voices are heard [19, 25, 28]. These align with the principle of ethical symmetry, positioning children as social actors with vulnerabilities [5], and reflect CCI's broader participatory design tradition that seeks to expand children's roles from informants toward more agentic and influential positions (for example [22, 26]).

Alongside methodological developments, ethics in CCI is viewed as a relational practice, extending beyond institutional approval to ongoing judgments during research [54]. Emerging technologies, especially AI, introduce new ethical uncertainties [6, 14, 50, 57]. Micro ethics highlight in-situ decision-making during interactions [52, 53], with researcher roles shifting among facilitators, co-designers, and caregivers, especially with neurodiverse children or social hierarchies (for example [1, 48, 55]). Despite this growing body of work, practical guidance remains limited, prompting calls for resources beyond formal ethics review [38]. In response, Read et al. [38] propose the Child Centred Ethics (CCE) framework, as a practical tool for navigating ethical issues such as power, inclusion, consent, and ownership. The framework provides prompts to guide research planning, execution, and reflection, fostering systematic ethical awareness throughout projects, especially in participatory studies involving children.

What is currently missing from the CCE framework [38] is an explicit acknowledgement of the various roles adults play in successful and ethical CCI projects with children. Even so, there is an abundance of CCI research acknowledging the significant role of adult

actors, from decades back. Druin [10], already in 2002, discussed the influence of teachers and parents on participatory design with children: both stakeholder groups can be helping or hindering children's participation and engagement. Ever since, CCI researchers have addressed these adult stakeholder groups' influence in various studies [15, 32]. The teachers' influence and different roles teachers can take in the design process in the context of school have been elaborated by Iivari and Kinnula [20, 21], pointing out that teachers possess valuable expertise on working with children and managing the class and they may also act as important information providers on the school context and on the participating pupils. Molin-Juustila et al. [34] and Kuure et al. [30] have pointed out the problematic influence of researchers and teachers on children's design outcomes - they may unintentionally steer children's creations to particular directions. Adult stakeholders not even physically present may be heavily shaping children's design, which may be reproducing, for example, their parents' or teachers' views and opinions [34]. The positive but also the negative influence of parents has been acknowledged in CCI research in studies inquiring intergenerational design among parents and children [37, 56]. Moreover, various other adult stakeholders have been identified in CCI projects, for example, experts on learning or health [18, 34, 36]. In the context of digital fabrication and making with children, different kinds of facilitators, tutors, helpers, and instructors have been identified as helping or hindering children's participation [18, 33, 36]. Some CCI researchers have also adopted a self-reflective stance and reported on the significant role of CCI researchers in shaping children's participation [7, 23, 30, 46, 58]. However, there are few CCI studies critically reflecting on the role of adults in CCI projects as well as studies reporting on challenges in this respect [36].

In the context of this paper, we explicitly reflect on our successes and challenges in studies with children to build a shared vocabulary and structure for surfacing ethically consequential moments that may otherwise remain implicit. Through this work, we aim to enable more systematic reflections across the lifecycle of a project for the CCI community to continue building on ethical frameworks, like the CCE framework [38].

3 Research Methodology

In this section, we present the process of our reflective study first by presenting our experiences and positionality as diverse CCI researchers, and then by describing the different phases of our reflections.

3.1 Author Positionalities

Authors of this study are senior, mid-career, and initial stage CCI researchers. The senior researchers have over two decades of experience working with children and young people in the context of technology and schools. The mid-career researchers have over a decade of experience conducting participatory design, and/or STEAM-style workshops with children and youth, and the initial stage researchers have between two to five years of experience conducting participatory work with children. All authors have practical hands-on experience of planning and conducting workshops with children in nine countries; Denmark, Finland, Iceland, India, Japan,

Malaysia, UAE, UK, and USA. The authors also have diverse educational and cultural backgrounds, including expertise and training in cultural anthropology, humanities and education, information systems, business, computer science, design, and human-computer interaction. They are of Finnish, Indian, British, Pakistani, Iranian, and Spanish backgrounds. Thus, the authors of this paper have diverse perspectives towards and experiences with working with children, teachers, and schools around the world making them well equipped to reflect on the success and challenges of planning and conducting participatory research with children.

3.2 Process

The current study is part of our ongoing work on developing ethical frameworks for CCI research, inspired by the work of Read et al. [38], where we reflect on our past project work with children and schools to seek new insights for our research practice. In writing this paper, we followed a multi-phase reflection process, where each phase included individual reflections, collective discussions, and follow-up emails as part of the process.

In the *first phase*, which lasted two months, we worked together in an online shared spreadsheet to reflect on and discuss our past and ongoing project experiences. We first had an initial group meeting to discuss the CCE framework [38], which we intended to utilize as a basis for our reflections, to build a shared understanding of the framework. The framework includes the typical planning and ethics reviews activities (phases one and two respectively in the framework), and it highlights key concerns to reflect upon before the study, during the study, immediately after the study, later after the study, during data analysis, and after data analysis (phases three to eight). Using these phases as a starting point, we individually and collectively reflected on the experiences and challenges, as well as insights that arose from the challenges, making notes of other similar experiences in other projects. In addition, we also reflected on the roles and experiences of the various adult stakeholders in each project.

In the *second phase*, which took place over approximately three months, the collated findings from phase one were categorized into themes and subthemes using thematic analysis [2]. Results of this analysis are presented in [49].

In the *third phase*, which is presented in this paper we built on the analysis and experiences from the first two phases and worked individually over two weeks to devise the following and write them in a shared spreadsheet:

- *Success statements*: Based on previous experiences and insights, we reflected on what makes a research study or similar activity with children or teenagers a success, focusing on conducting research within a school context.
- *Identifying challenges*: We then reflected on the challenges and barriers related to the success statements devised in the previous step.
- *Experiences (optional)*: We could optionally consider specific experiences, if any occurred to us in the earlier steps, and make notes of those too.

The success statements were developed through an iterative process of reviewing, grouping, and discussing experiences documented in the shared spreadsheet (in phase three). In total, 15

researchers contributed to the reflections, resulting in a large number of experience-level entries from different projects - big and small, ongoing and finished, or new ones. The entries ranged from short notes describing specific incidents to longer reflections capturing recurring challenges across multiple projects. Some success statements can be traced back to a small number of concrete examples, while others emerged from the accumulation of similar experiences recorded by different researchers in different contexts. After this, the first author thematically grouped the successes and challenges in a shared MIRO board. This data was collectively discussed and refined over two weeks (four group meetings, five hours total, and individual work outside the meetings) for this paper. By the end of the process we had collectively agreed on nine aspects of success in three key areas and 15 types of challenges in seven key areas. We had also agreed on key relationships between the aspects of success and types of challenge; i.e. which challenge/challenges were most important to mitigate for each type of success. We show these results summarised in Figure 1 and discuss in detail in the following sections.

4 Success in CCI Studies with Children

In this section we present the three key areas of success each with associated success statements, along with explaining how our findings emerged from the data. We include quotes from the raw data used in the analysis along with associated identifiers. At the beginning of each section we include example experiences from our work that influenced our discussions during data analysis.

4.1 Success 1: All Stakeholders Have a Positive Experience from a Well-planned and Well-implemented Research Project

During our analysis, many discussions drew on experiences describing uncertainty and negotiation at the start of activities based in schools. In one example a researcher described being invited to hold a workshop at a local school, and arriving there without clear information about who they would meet and how to navigate the school or its social etiquette. The host at the school seemed to be confused about the situation as well. It transpired that the children had been waiting patiently in a classroom for 30-minutes while the researchers (unaware of this) were greeting the teachers and drinking tea. One of the children kindly asked the researchers to consider starting the workshops on time in the future

In this section we also consider the practical considerations that impact the planning and implementation of research at schools. Thus, the first statement focuses on the success of the planning and implementation of the project in collaboration with the diverse stakeholders, mainly, the adults (teachers, researchers) and children (as participants), as described next.

4.1.1 Researchers Conduct Appropriate Planning for the Research Project. In our data, we identified four items that constitute this first subtheme of success. This includes having “a clearly planned structure and explicit goals for each session” (item #1). It is also important that all members of the research team understand what data is to be collected and the methods for that. “Piloting the study” (item #2) prior to conducting the actual sessions with children can

also help identify and address potential issues in the workshop materials and data collection tools. However, it is unlikely that every potential situation can be predicted and mitigated so you are successful when you can “effectively respond to unexpected events or situations that arise during a study, and still emerge with valuable data and/or meaningful experiential insights” (item #3). Another mitigation strategy for effective planning is to ensure that there are “a sufficient number of researchers (and teachers and other adults) present in the sessions to moderate and provide additional support for children who might need it” (item #4), particularly when working with younger children or those who are easily excited or distracted.

4.1.2 Researchers Can Work Effectively During the Research Sessions at Schools. Effective planning of the work results in researchers being able to work effectively during the implementation of the research project in schools. This includes two items. First, “having a predictable or familiar environment” (item #5) makes implementing (and planning) much easier. Knowing the teachers, children, and/or school prior to the study makes the sessions less unpredictable, anxiety provoking, or confusing for all involved. This familiarity can be due to a prior project with the same school or class or being able to have an introductory session well in advance. Being familiar with the rhythm of the school year, such as schools breaks and trips, as well as everyday rhythms and activities and undulating excitement levels, assists researchers being able to work (and plan) effectively when in the classroom. Second, working “in a research team with a shared *weltanschauung* (world view)” (item #6) makes the team and methods of working strong and in sync. This enables researchers to negotiate roles and responsibilities in situ with ease since the communication and understanding are strong and there is little chance of misunderstandings. To enable success, researchers need to be able to quickly react to these challenges in situ and ensure that their time at the school is as productive as possible.

4.1.3 Collaboration Between Researchers and Teachers Works Well. The third subtheme for the success statement one is collaboration between researchers and teachers. It is important to build rapport with teachers (and schools) to ensure smooth collaboration, since as researchers, we are dependent on teachers (and schools) welcoming us to their classrooms. A “good collaboration with teachers also takes into account the teacher’s personal interest and preferences for involvement in the project” (item #7) for the teacher to have positive attitude towards the study and willingness to invest their time in it. For researchers, it is also important to “have a possibility to collaborate with teachers with diverse expertise during different phases of the project” (item #8) to experience and gain diverse perspectives towards the research goals and impacts, and to be able to translate and transfer research insights and outcomes beyond a specific context.

4.1.4 Collaboration Between Researchers and Children Works Well. While smooth collaborations between researchers and teachers are imperative for successful research outcomes and experiences, equally important are collaborations and agreements between researchers and participating children. A barrier to success can be clarity around the researchers’ roles and responsibilities when they visit a classroom. Therefore, “there ought to be mutual agreement

and understanding between teachers and researchers on the role of the researchers and what the sessions aim to accomplish” (item #9). This ensures that children are aware of why, when, how, and for what purpose there is a researcher in their classroom. As researchers, who are usually enthusiastic about their work and its potential impacts, it is imperative to also be clear on potential impacts of the research and “critically consider the limitations of introducing a techno-solutionist mindset” (item #10) to the children.

4.1.5 The Study Produces Value for All Stakeholders. Another underlying subtheme for success in CCI studies is ensuring that it “produces value for all the participants as well as the research project” (item #11). The study needs to move the needle forward for research, and not only researchers’ careers and publications; after all, it is about conducting meaningful and impactful research. However, as also discussed widely within the CCI community, all stakeholders must also gain value from participating in the research. This includes children, teachers, and schools who can benefit from the activities planned by the researchers. Research can “support the school’s STEM agenda and children can learn something new” (item #12), empowering them in several ways, such as changing their attitude towards research and STEM careers and showing them something new and useful. For teachers and schools, it can be valuable to have researchers conduct diverse activities and bring cutting edge technologies and trends to their classrooms. Another way to look at this is to evaluate the success at the end of a study when nothing has dramatically gone wrong. That is, “children had a good experience, the research team collected some data (whether useful or not at this point), and teachers and schools are happy with how things have gone” (item #13). But then again, success can also be found in studies that end up with no (meaningful) results, as then researchers can “learn how not to run specific studies again” (item #14).

4.2 Success 2: Researchers Get the Data They Need

Our analysis included reflecting on experiences where data was collected, but later turned out to be unsuitable or difficult to use for the intended analysis. One example comes from a workshop where a researcher described conducting sessions in extreme heat with only loud ceiling fans for ventilation. It was difficult to hear children during the activities, and this became even more problematic later when working with the audio recordings from the sessions. In another example from a kindergarten workshop, very young children aged three to five were ideating and drawing technologies. The researchers discussed the ideas with the children and attempted to capture these through field notes and short written descriptions added to the back of the drawings. However, with only two researchers present in a large room of children, not all discussions could be captured. Later, this made it time-consuming and challenging to link field notes or recorded discussions back to specific drawings.

Successful data collection is perhaps the easiest kind of success to understand and measure as it relates to whether researchers gathered the data they needed to support intended analysis and resulting academic outputs. This category contained only three

items of data after analysis. Of these, one focussed on success being collection of “some data (whether useful or not at this point)” (item #15), implying that success can be considered at multiple points in a research project; i.e., straight after a study researchers should consider an activity a success if data is collected, even if later in the analysis the notion of success may change. Another response related to engagement and completion (of all questions) in a survey: “in a survey they understand the questions and scale, think about the questions and answer them all” (item #16). This refers to the practicalities of data collection with children; that some questions in a survey may be accidentally or intentionally missed (in a way that is less common when working with adult participants) and may cause challenges in later analysis. Also, the notion of engagement refers to children understanding questions within the data collection and providing concerted responses, which links to Success statement 3. The third piece of data included “Data collection is smooth” (item #17), this highlights another issue related to engagement; if children cannot understand aspects such as the questions, or answer scales, this typically results in frustration among the children and their need to ask questions of nearby adults. Such situations impact the ‘smooth’ running of a study in addition potentially negatively impacting the quality of the data collection if the misunderstanding cannot be identified and rectified quickly.

4.3 Success 3: Children Are Engaged, Heard, and Influential

Our analysis drew on experiences that highlighted tensions between adult-defined research agendas and children’s everyday experiences. For instance, in one project researchers selected the theme of bullying, which was decided in collaboration with city officials who identified it as a significant problem in schools. This framing appeared justified, as many children also reported experiences related to bullying. However, during the project some children commented that they already deal with topics related to bullying so frequently in different contexts that they found the theme boring. Thus, our third statement focuses on children being engaged in study activities, their voices being heard and valued, and children’s overall positive experience.

4.3.1 Children Can Contribute Effectively. Children’s contributions are central to any research study in CCI, heavily impacting its success. This success is contingent on several factors, such as ensuring children “have enough time to develop and discuss their ideas” (item #18). As mentioned previously, time is usually quite limited in research studies given how school schedules and curricula are not always flexible enough for adding multiple unplanned sessions and activities outside of the curriculum. Moreover, the research activity and researchers need to create a “space for creative, imaginative, honest, and playful contributions” (item #19) by children, within that limited time. The influence of adult researchers on children’s contributions must also be critically scrutinized and reigned in, such that “adults facilitators enable children’s ideas without overly steering outcomes or taking control” (item #20). For this, “researchers need build trust with and provide psychological safety” (item #21) to participating children, enabling them to be their authentic selves and express and produce ideas freely and honestly. The success of children’s contributions is magnified when “children feel safe and

are able to think outside the box and potentially contribute great – or very clear – insights” (item #22).

4.3.2 Children’s Voices and Experiences Are Valued. Given the complex lived experiences of children, it is important that “children’s everyday experiences are acknowledged rather than ignored or simplified” (item #23). For instance, design outputs like drawings or prototypes many times show children’s ideas and what they came up with, but not why those ideas matter to them. Furthermore, when children design together, shared or typical experiences can dominate the outcome, and other children’s everyday realities may stay invisible. This leads us to the second item here that “children’s voices actually shape the outcomes” (item #24).

4.3.3 Positive Child Experience. In the previous success statement, we discussed how participation in the research study must be valuable for all stakeholders, including children. Here, we focus specifically on children gaining positive experiences from the research study. This is contingent on “children being meaningfully engaged, not just compliant (e.g., because it is school)” (item #25). The research “activity should engage the children such that they find it fun and interesting, and don’t get bored” (item #26). When experienced researchers work closely with (engaged and excited) teachers, it is possible to design activities and tasks that “children get enjoyment and fulfilment out of” (item #24). Engagement is also multifaceted and not only dependent on how quickly a task or activity is completed. There are quieter or slower ways of taking part that are engaging. For large groups, there can be multiple ways to participate and engage in an activity, allowing time and space. Thus, success is when you get to the end of a study, and nothing went dramatically wrong and “the children had a good experience” (item #27), as evident from the sessions and post session feedback.

5 Challenges in CCI Studies with Children

In this section we present the key seven areas of challenges identified through our collaborative analysis. The underlying data which comprises these areas are shown visually in Figure 1 and italicized in the text.

5.1 Challenge 1: Children Cannot Contribute

This challenge relates to the practicalities of children being able to contribute effectively in research studies in a classroom context. The first key area evident in the data was ensuring activities, and their associated resources, were at (or could be adjusted to) an *appropriate developmental level* for child participants, for example, ensuring that any instructional information provided to children is appropriately matched to their reading level. The second area related to the inherent *influence of the classroom context* on the children. Specific points related to the typical authority roles of adults in classroom and the negative effect that may have on children in a study; creating an unintentionally formal atmosphere which may limit creativity and children’s sense of autonomy. A closely related point was the impact of the classroom as a ‘place’ [9] where usually order is maintained and noise and mess are undesirable.

5.2 Challenge 2: Children Are Not Engaged

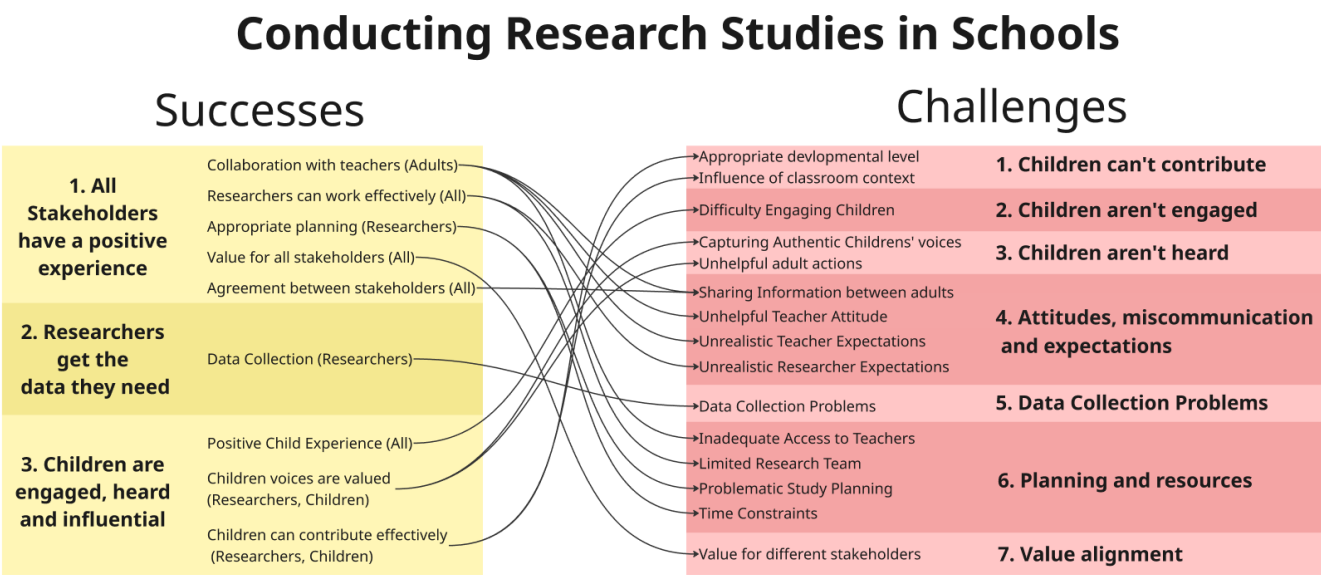
This challenge is related to ensuring that children are sufficiently willing and motivated to maintain meaningful participation throughout a research activity, captured in the category of *difficulties with engaging children*. In the data, this was differentiated from just compliance where children appear to be on-task but have little interest or motivation. Telling genuine engagement apart from compliance is difficult. Furthermore, balancing aspects that create engagement such as fun with educational or research goals is difficult, as is predicting what aspects within an activity might engage or inspire children.

5.3 Challenge 3: Children Are Not Heard

Since adult researchers usually decide the themes, questions, and materials, children might feel obligated to talk about what researchers expect instead of what actually matters to them. Even without meaning to, researchers can nudge children toward the “right” kind of participation or result. This kind of factors make *capturing authentic children’s voices* difficult, and during the analysis process researchers should take care not to rework or reshape children’s ideas. A related issue is that of *unhelpful adult actions*, where the intention may be good but the action inadvertently impacts the capture of children’s voices. This may include unintentionally cleaning up the space and discarding materials that are actually part of children’s creative expression, treating the very things that children treasure as trash because they are perceived as unfinished or misinterpreted entirely. Additionally, an adult might also unintentionally close down divergent thinking in a group in an effort to be helpful in moderating a discussion. Careful planning and practice are required to ensure children’s voices and experiences are valued.

5.4 Challenge 4: Attitudes, Miscommunication and Expectations

This challenge includes four key aspects of working in schools, which are often unexpected and can prove very important. The first relates to *unhelpful teacher attitude* where the teacher has an ambivalent or negative attitude towards the study. This may impact the practical aspects of the study where the teacher is reluctant to give time to the project (their own or their class’ time), and in the worst case, the negative attitude of the teachers towards the project can spread to the participating pupils. The second relates to adequately *sharing information between adults*. This may be problematic as, for example, school staff may have misconceptions about the actual context of the study or what it will involve, which is then relayed to children, parents, school management etc. Clarity of adult roles within the study (e.g. should staff take an active or passive role, how much help or additional explanation can support staff provide, under what circumstances should a teacher intervene) can also impact the smooth running of the study and experience for the children. Information sharing and coordination between researchers and teachers can often be strained or sporadic, especially if there is limited access to the teachers prior to sessions, or even during them. The third aspect is *unrealistic researcher expectations*, primarily of the study running smoothly, which includes the need



values to even prioritize? While in this study we focused on researchers, teachers, and children as the main stakeholders, there are several other stakeholders whose values, agendas, and goals impact the research work. It can also be difficult to ascribe values to specific activities or stakeholders as even within the same project, not all children or teachers might experience value in the same way. Some participants might feel proud and accomplished, while others feel confused, bored, or disengaged. This uneven distribution makes it hard to claim that a project was broadly creating value, even if outcomes look successful overall. Moreover, when there are visible signs of value misalignment, such as why a teacher is not keen to invite researchers to their class, this is often not something that is investigated or understood.

6 Discussion

Grounded in failure, our aim in this work was to gain an increased understanding on what a successful CCI project looks like. The three success statements are based on our collective experiences (of failures and frustrations) across a multitude of projects spanning several continents. It should be noted that many of the projects related to design-based activities and so the notion of the ‘child voice’ is inherently important in our findings. Building on Kinnula et al. [29], we see that the basis of our success statements, as well as challenges we identified, are potentially found in the following additional issues that were not directly evident in our data:

- Researchers’ practical goals for the work and aimed outcomes for it.** These often originate from the goals of a research project or from general motivations for the research topic itself, for example, the higher level aim for advancing children’s computational empowerment, or values, interests, and passions driving the researchers’ work. They centrally guide researchers in their planning of the work: in choosing their collaborators, planning of the workshop topics and methods used in them, and what kind of data they expect to be collected.
- All stakeholders’ needs, drivers, and motivations for the work, as well as their expectations.** For researchers these can be linked with the research project or their personal careers; for teachers children’s learning or fit with the curriculum are core value they expect, but there might also be personal or class or school specific needs and expectations. Mapping these expectations is crucial to identify, address, and mitigate conflicts and misalignments.

The small number of prior work engaging in failures in CCI research practice indicates that there is space for further examination of it in the CCI community. Our work in this study complements and partly overlaps the themes of failure Rukmane et al. [45] identified - unpredictability, technology targetted for adults, and children’s willingness to achieve the goal. Previous research has also brought forward how choice of tools can influence the process with children [31], as well as challenges in the design and evaluation process [13, 43]. In addition, as a hint of increasing interest in the failures and challenges of working with children and adolescents in CCI, there have been some workshops organized on this topic to gather the CCI community to discuss and share their experiences in recent years [4, 17, 39]. Despite this, papers reporting and analysing the

failures are still scarce. Effective training for CCI work requires time, supported practice, reflection, and opportunities to observe experienced practitioners. Learning from others’ mistakes is particularly valuable, yet many researchers operate in contexts without access to local expertise. In such environments, the lack of openly shared accounts of failure further hinders learning and professional growth.

With these points in mind, we invite CCI researchers to reflect on their experiences, especially ones that were uncomfortable, frustrating, conflicting, and potential catastrophes. We encourage the CCI community, through our confessional writing genre ([47]) and somewhat provocative revealing of our challenges [3] to start more openly reflecting on, reporting on, and debating on our challenges and failures. It is a pity that there are no specific avenues for reporting on the *failures and lessons learned* in research, which can be very useful, particularly to stop people having the same issues that could have been avoided if they had known beforehand. As the community grows and develops, it is becoming crucial to share our learnings and lessons; especially since when things do not always go according to a plan, there can be much more to learn.

7 Conclusion

This collective reflection underscores the importance of embracing both successes and challenges as integral to the research process in CCI research studies conducted within schools. Our approach was driven by a need to critically reflect on and openly share experiences of failure, with the aim of enhancing research practice and fostering growth within the CCI community. By foregrounding what we saw as success in CCI projects as well as identifying challenges in them, we move beyond the dominant narrative of “success stories” to foster a more transparent and authentic discourse within the CCI community. Our findings highlight that genuine engagement, meaningful collaboration, and value creation for all stakeholders are not merely outcomes to be achieved, but ongoing practices shaped by context, relationships, and critical self-reflection. Recognizing our own fallibility opens space for learning from discomfort, missteps, and unexpected outcomes, ultimately strengthening both methodological rigor and ethical sensitivity. We invite the CCI community to adopt confessional and reflective approaches that acknowledge the complexity and unpredictability inherent generally in CCI research, but being maybe even more visible in CCI studies conducted in school context, or any other contexts where researchers have very little control and power over the structure and organization of the studies – contrasted with studies conducted in laboratory conditions. Our focus on school context was motivated by school being both a common location for CCI researchers to work with children yet also often an unfamiliar and problematic context for researchers. That is of course also a central limitation to our study, and future studies critically examining CCI work in other contexts, such as e.g. non-formal learning contexts [11], would help extend the CCI community understanding of what successes and challenges are shared across contexts and which ones are specific to e.g. working in schools.

We hope these practical insights will be valuable for CCI researchers planning and running studies in schools, both to help reflect different aspects of success relevant in their own studies as

well as challenges which may pose barriers to that success. Finally, we propose the method we followed in this work as well as the vocabulary used in this study as an approach others within the CCI community can use to reflect critically on their own experiences in order to extend our findings, to provide further value to the community.

8 Selection and participation of children

No children participated in this work.

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References

- [1] Fatima A Boujarwah, Nazneen, Hwajung Hong, Gregory D Abowd, and Rosa I Arriaga. 2011. Towards a framework to situate assistive technology design in the context of culture. In *The proceedings of the 13th international ACM SIGACCESS conference on Computers and accessibility*. Association for Computing Machinery, New York, NY, USA, 19–26. doi:10.1145/2049536.2049542
- [2] Virginia Braun and Victoria Clarke. 2012. *Thematic analysis*. American Psychological Association, Washington, DC. doi:10.1037/13620-004
- [3] Barry Brown, Alexandra Weilenmann, Donald McMillan, and Airi Lampinen. 2016. Five Provocations for Ethical HCI Research. In *Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems* (San Jose, California, USA) (CHI '16). Association for Computing Machinery, New York, NY, USA, 852–863. doi:10.1145/2858036.2858313
- [4] Katharina Buckmayer, Filipa Rocha, Elisa Rubegni, Reem Talhouk, Hugo Nicolau, and Ana Cristina Pires. 2024. Participatory Design with Young Children: Failures, Challenges, and Successes. In *Proceedings of the 23rd Annual ACM Interaction Design and Children Conference* (Delft, Netherlands) (IDC '24). Association for Computing Machinery, New York, NY, USA, 1038–1040. doi:10.1145/3628516.3661158
- [5] Pia Christensen and Alan Prout. 2002. Working with ethical symmetry in social research with children. *Childhood* 9, 4 (2002), 477–497. doi:10.1177/09075682020090040
- [6] Gail Collyer-Hoar and Elisa Rubegni. 2025. “Won’t somebody please (actually) think of the children?” AI Ethics for Children: A Scoping Review. *ACM J. Responsib. Comput.* 2, 2, Article 10 (Aug. 2025), 37 pages. doi:10.1145/3745031
- [7] Bronwyn J. Cumbo, Eva Eriksson, and Ole Sejer Iversen. 2020. The “Least-Adult” Role in Participatory Design with Children. In *Proceedings of the 31st Australian Conference on Human-Computer-Interaction* (Fremantle, WA, Australia) (OzCHI '19). Association for Computing Machinery, New York, NY, USA, 73–84. doi:10.1145/3369457.3369464
- [8] Phillip Dawson and Samantha L. Dawson. 2018. Sharing successes and hiding failures: ‘reporting bias’ in learning and teaching research. *Studies in Higher Education* 43, 8 (2018), 1405–1416. arXiv:https://doi.org/10.1080/03075079.2016.1258052 doi:10.1080/03075079.2016.1258052
- [9] Paul Dourish. 2006. Re-space-ing place: “place” and “space” ten years on. In *Proceedings of the 2006 20th Anniversary Conference on Computer Supported Cooperative Work* (Banff, Alberta, Canada) (CSCW '06). Association for Computing Machinery, New York, NY, USA, 299–308. doi:10.1145/1180875.1180921
- [10] Allison Druin. 2002. The role of children in the design of new technology. *Behaviour and information technology* 21, 1 (2002), 1–25. doi:10.1080/01449290110108659
- [11] Haim Eshach. 2007. Bridging in-school and out-of-school learning: Formal, non-formal, and informal education. *Journal of science education and technology* 16, 2 (2007), 171–190.
- [12] Christopher Frauenberger, Marjo Rauhala, and Geraldine Fitzpatrick. 2016. In-Action Ethics. *Interacting with Computers* 29, 2 (06 2016), 220–236. arXiv:https://academic.oup.com/iwc/article-pdf/29/2/220/10296473/iww024.pdf doi:10.1093/iwc/iww024
- [13] William Gaver, John Bowers, Tobie Kerridge, Andy Boucher, and Nadine Jarvis. 2009. Anatomy of a failure: how we knew when our design went wrong, and what we learned from it. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (Boston, MA, USA) (CHI '09). Association for Computing Machinery, New York, NY, USA, 2213–2222. doi:10.1145/1518701.1519040
- [14] Eva Durall Gazulla, Noora Hirvonen, Sumita Sharma, Heidi Hartikainen, Ville Jylhä, Netta Iivari, Marianne Kinnula, and Aizhan Baizhanova. 2025. Youth perspectives on technology ethics: analysis of teens’ ethical reflections on AI in learning activities. *Behaviour & Information Technology* 44, 5 (2025), 888–911. doi:10.1080/0144929X.2024.2350666
- [15] Mona Leigh Guha, Allison Druin, and Jerry Alan Fails. 2013. Cooperative Inquiry revisited: Reflections of the past and guidelines for the future of intergenerational co-design. *International Journal of Child-Computer Interaction* 1, 1 (2013), 14–23. doi:10.1016/j.ijcci.2012.08.003
- [16] Roger A Hart. 1992. *Children’s participation: From tokenism to citizenship*. Technical Report. UNICEF International Child Development Centre.
- [17] Heidi Hartikainen, Leena Ventä-Olkkonen, Marta Cortés Orduña, Iván Sánchez Milara, Sumita Sharma, Behnaz Norouzi, and Marianne Kinnula. 2022. A Series of Fortunate Accidents: Lessons Learned When Things Go Sideways in Making Projects with Children. In *6th FabLearn Europe / MakeEd Conference 2022* (Copenhagen, Denmark) (FabLearn Europe / MakeEd 2022). Association for Computing Machinery, New York, NY, USA, Article 19, 4 pages. doi:10.1145/3535227.3535247
- [18] Heidi Hartikainen, Leena Ventä-Olkkonen, Marianne Kinnula, and Netta Iivari. 2023. “We were proud of our idea”: How teens and teachers gained value in an entrepreneurship and making project. *International Journal of Child-Computer Interaction* 35 (2023), 100552. doi:10.1016/j.ijcci.2022.100552
- [19] Casey Lee Hunt, Kaiwen Sun, Zahra Dhuliawala, Fumi Tsukiyama, Iva Matkovic, Zachary Schwemler, Anastasia Wolf, Zihao Zhang, Allison Druin, Amanda Huynh, Daniel Leithinger, and Jason Yip. 2023. Designing Together, Miles Apart: A Longitudinal Tabletop Telepresence Adventure in Online Co-Design with Children. In *Proceedings of the 22nd Annual ACM Interaction Design and Children Conference* (Chicago, IL, USA) (IDC '23). Association for Computing Machinery, New York, NY, USA, 52–67. doi:10.1145/3585088.3589359
- [20] Netta Iivari and Marianne Kinnula. 2016. Inclusive or Inflexible: a Critical Analysis of the School Context in Supporting Children’s Genuine Participation. In *Proceedings of the 9th Nordic Conference on Human-Computer Interaction* (Gothenburg, Sweden) (NordCHI '16). Association for Computing Machinery, New York, NY, USA, Article 63, 10 pages. doi:10.1145/2971485.2971531
- [21] Netta Iivari and Marianne Kinnula. 2016. ‘It Has to Be Useful for the Pupils, of Course’ – Teachers as Intermediaries in Design with Children. In *Nordic Contributions in IS Research*, Ulrika Lundh Snis (Ed.). Springer International Publishing, Cham, 16–28.
- [22] Netta Iivari and Marianne Kinnula. 2018. Empowering children through design and making: towards protagonist role adoption. In *Proceedings of the 15th Participatory Design Conference: Full Papers - Volume 1* (Hasselt and Genk, Belgium) (PDC '18). Association for Computing Machinery, New York, NY, USA, Article 16, 12 pages. doi:10.1145/3210586.3210600
- [23] Netta Iivari, Marianne Kinnula, and Leena Kuure. 2015. With best intentions: A Foucauldian examination on children’s genuine participation in ICT design. *Information Technology & People* 28, 2 (06 2015), 246–280. arXiv:https://www.emerald.com/itp/article-pdf/28/2/246/1232474/itp-12-2013-0223.pdf doi:10.1108/ITP-12-2013-0223
- [24] Netta Iivari, Sumita Sharma, Leena Ventä-Olkkonen, Tonja Molin-Juustila, Kari Kuutti, Jenni Holappa, and Essi Kinnunen. 2022. Critical agenda driving child-computer interaction research—Taking a stock of the past and envisioning the future. *International Journal of Child-Computer Interaction* 32 (2022), 100408. doi:10.1016/j.ijcci.2021.100408
- [25] Ole Sejer Iversen, Kim Halskov, and Tuck W Leong. 2012. Values-led participatory design. *CoDesign* 8, 2-3 (2012), 87–103. doi:10.1080/15710882.2012.672575
- [26] Ole Sejer Iversen, Rachel Charlotte Smith, and Christian Dindler. 2017. Child as Protagonist: Expanding the Role of Children in Participatory Design. In *Proceedings of the 2017 Conference on Interaction Design and Children* (Stanford, California, USA) (IDC '17). Association for Computing Machinery, New York, NY, USA, 27–37. doi:10.1145/3078072.3079725

- [27] Rikke Hagensby Jensen, Elisabet M Nilsson, Anne-Marie Hansen, Daisy Yoo, and Eva Eriksson. 2025. Provocations and More-Than-Human Perspectives in Human-Computer Interaction. *Interacting with Computers* (04 2025), iwaf020. arXiv:https://academic.oup.com/iwc/advance-article-pdf/doi/10.1093/iwc/iwaf020/62924168/iwaf020.pdf doi:10.1093/iwc/iwaf020
- [28] S Rebecca Kelly, Emanuela Mazzone, Matthew Horton, and Janet C Read. 2006. Bluebells: a design method for child-centred product development. In *Proceedings of the 4th Nordic Conference on Human-Computer Interaction: Changing Roles* (Oslo, Norway) (NordiCHI '06). Association for Computing Machinery, New York, NY, USA, 361–368. doi:10.1145/1182475.1182513
- [29] Marianne Kinnula, Netta Iivari, Minna Isomursu, and Sari Laari-Salmela. 2018. 'Worksome but rewarding'—stakeholder perceptions on value in collaborative design work. *Computer Supported Cooperative Work (CSCW)* 27, 3 (2018), 463–494.
- [30] Leena Kuure, Eija Halkola, Netta Iivari, Marianne Kinnula, and Tonja Molin-Juustila. 2010. Children imitate! appreciating recycling in participatory design with children. In *Proceedings of the 11th Biennial Participatory Design Conference* (Sydney, Australia) (PDC '10). Association for Computing Machinery, New York, NY, USA, 131–140. doi:10.1145/1900441.1900460
- [31] Laura Malinverni and Narcis Pares. 2017. Learning from Failures in Designing and Evaluating Full-Body Interaction Learning Environments. In *Proceedings of the 2017 CHI Conference Extended Abstracts on Human Factors in Computing Systems* (Denver, Colorado, USA) (CHI EA '17). Association for Computing Machinery, New York, NY, USA, 1065–1074. doi:10.1145/3027063.3053352
- [32] Emanuela Mazzone, Netta Iivari, Ruut Tikkanen, Janet C. Read, and Russell Beale. 2010. Considering context, content, management, and engagement in design activities with children. In *Proceedings of the 9th International Conference on Interaction Design and Children* (Barcelona, Spain) (IDC '10). Association for Computing Machinery, New York, NY, USA, 108–117. doi:10.1145/1810543.1810556
- [33] Iván Sánchez Milara, Kati Pitkänen, Jari Laru, Megumi Iwata, Marta Cortés Orduña, and Jukka Riekk. 2020. STEAM in Oulu: Scaffolding the development of a Community of Practice for local educators around STEAM and digital fabrication. *International Journal of Child-Computer Interaction* 26 (2020), 100197. doi:10.1016/j.ijcci.2020.100197
- [34] Tonja Molin-Juustila, Marianne Kinnula, Netta Iivari, Leena Kuure, and Eija Halkola. 2015. Multiple voices in ICT design with children—a nexus analytical enquiry. *Behaviour & Information Technology* 34, 11 (2015), 1079–1091. doi:10.1080/0144929X.2014.1003327
- [35] Virginia Morrow and Martin Richards. 1996. The ethics of social research with children: An overview 1. *Children & society* 10, 2 (1996), 90–105. doi:10.1111/j.1099-0860.1996.tb00461.x
- [36] Behnaz Norouzi, Marianne Kinnula, and Netta Iivari. 2019. Interaction Order and Historical Body Shaping Children's Making Projects—A Literature Review. *Multimodal Technologies and Interaction* 3, 4 (2019). doi:10.3390/mti3040071
- [37] Behnaz Norouzi, Sumita Sharma, Marianne Kinnula, Netta Iivari, Minttu Ukkola, Ivan Sanchez Milara, Gleb Bulygin, Jari Uusitalo, and Megumi Iwata. 2024. Enabling children's genuine participation in digital design and fabrication: instructors' perspective. *International Journal of Technology and Design Education* 34, 3 (2024), 1067–1091.
- [38] Janet Read, Matthew Horton, Daniel Fitton, and Gavin Sim. 2025. Child Centred Ethics (CCE): A Practical Framework for Enhanced Child Participation in HCI. In *Proceedings of the 2025 CHI Conference on Human Factors in Computing Systems* (CHI '25). Association for Computing Machinery, New York, NY, USA, Article 404, 16 pages. doi:10.1145/3706598.3714248
- [39] Janet Read, Oussama Metatla, Matthew Horton, Elisa Rubegni, and Jason Yip. 2022. Where we Succeed and Fail: Reflecting on the Challenge of doing Research with Children. In *Proceedings of the 21st Annual ACM Interaction Design and Children Conference* (Braga, Portugal) (IDC '22). Association for Computing Machinery, New York, NY, USA, 712–714. doi:10.1145/3501712.3536388
- [40] Janet C. Read and Mathilde M. Bekker. 2011. The nature of child computer interaction. In *Proceedings of the 25th BCS Conference on Human-Computer Interaction* (Newcastle-upon-Tyne, United Kingdom) (BCS-HCI '11). BCS Learning & Development Ltd., Swindon, GBR, 163–170. doi:10.5555/2305316.2305348
- [41] Janet C. Read, Daniel Fitton, and Matthew Horton. 2014. Giving ideas an equal chance: inclusion and representation in participatory design with children. In *Proceedings of the 2014 Conference on Interaction Design and Children* (Aarhus, Denmark) (IDC '14). Association for Computing Machinery, New York, NY, USA, 105–114. doi:10.1145/2593968.2593986
- [42] Janet C. Read, Matthew Horton, Gavin Sim, Peggy Gregory, Daniel Fitton, and Brendan Cassidy. 2013. CHECK: a tool to inform and encourage ethical practice in participatory design with children. In *CHI '13 Extended Abstracts on Human Factors in Computing Systems* (Paris, France) (CHI EA '13). Association for Computing Machinery, New York, NY, USA, 187–192. doi:10.1145/2468356.2468391
- [43] Judy Robertson, Andrew Macvean, Samantha Fawcner, Graham Baker, and Ruth G. Jepson. 2018. Savouring our mistakes: Learning from the FitQuest project. *International Journal of Child-Computer Interaction* 16 (2018), 55–67. doi:10.1016/j.ijcci.2017.12.003
- [44] Maria Roussou, Sara Perry, Akrivi Katifori, Stavros Vassos, Angeliki Tzouganatou, and Sierra McKinney. 2019. Transformation through Provocation?. In *Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems* (Glasgow, Scotland Uk) (CHI '19). Association for Computing Machinery, New York, NY, USA, 1–13. doi:10.1145/3290605.3300857
- [45] Lundefinedvija Dana Rukmane, Elisa Rubegni, and Janet Read. 2022. Exploring Failures in Child-Computer Interaction: Shifting the paradigm from "failures need to be hidden" to "failure is a learning opportunity". In *Proceedings of the 21st Annual ACM Interaction Design and Children Conference* (Braga, Portugal) (IDC '22). Association for Computing Machinery, New York, NY, USA, 492–497. doi:10.1145/3501712.3535299
- [46] Marie-Monique Schaper, Maria Santos, and Narcis Pares. 2018. Orchestrating experts' assumptions and children's values in the design of Virtual Heritage experiences. *International Journal of Child-Computer Interaction* 17 (2018), 5–15. doi:10.1016/j.ijcci.2018.02.001
- [47] Ulrike Schultze. 2000. A Confessional Account of an Ethnography about Knowledge Work. *MIS Quarterly* 24, 1 (2000), 3–41. http://www.jstor.org/stable/3250978
- [48] Sumita Sharma, Krishnaveni Achary, Marianne Kinnula, Behnaz Norouzi, Henrietta Kinnula, Netta Iivari, Leena Ventä-Olkkonen, and Jenni Holappa. 2022. To Empower or Provoke? Exploring approaches for participatory design at schools for neurodiverse individuals in India. *International Journal of Child-Computer Interaction* 34 (2022), 100521. doi:10.1016/j.ijcci.2022.100521
- [49] Sumita Sharma, Najme Babai, Eva Durrall Gazulla, Heidi Hartikainen, Netta Iivari, Marianne Kinnula, Pauli A. Klemettilä, Yusra Niaz, Behnaz Norouzi, Priyanka Sebastian, Ruut Tikkanen, Leena Ventä-Olkkonen, Janet Read, Matthew Horton, and Daniel Fitton. 2026. Extending the Child-Centered Ethics Framework: Researchers' Reflections on Multiple Projects with Children and Teenagers. In *In Proceedings of the 2026 CHI Conference on Human Factors in Computing Systems* (CHI '26), April 13–17, 2026, Barcelona, Spain. ACM, New York, NY, USA. doi:10.1145/3772318.3793214
- [50] Sumita Sharma, Pauli Klemettilä, and Junko Tanaka. 2025. A robot teacher "is very good for learning, but not for human relationships": Japanese Children's Critical Perspectives Towards Ethical AI Futures. In *Proceedings of the 2025 CHI Conference on Human Factors in Computing Systems* (CHI '25). Association for Computing Machinery, New York, NY, USA, Article 215, 20 pages. doi:10.1145/3706598.3713204
- [51] Mike Sharples, Patrick McAndrew, Martin Weller, Rebecca Ferguson, Elizabeth FitzGerald, Tony Hirst, and Mark Gaved. 2013. Innovating Pedagogy, 2013: Exploring New Forms of Teaching, Learning and Assessment, to Guide Educators and Policy Makers, Open University Innovation Report 2. *The Open University* 15 (2013).
- [52] Katta Spiel, Emeline Brulé, Christopher Frauenberger, Gilles Bailley, and Geraldine Fitzpatrick. 2020. In the details: the micro-ethics of negotiations and in-situ judgements in participatory design with marginalised children. *CoDesign* 16, 1 (2020), 45–65. doi:10.1080/15710882.2020.1722174
- [53] Katta Spiel, Emeline Brulé, Christopher Frauenberger, Gilles Bailly, and Geraldine Fitzpatrick. 2018. Micro-ethics for participatory design with marginalised children. In *Proceedings of the 15th Participatory Design Conference: Full Papers - Volume 1* (Hasselt and Genk, Belgium) (PDC '18). Association for Computing Machinery, New York, NY, USA, Article 17, 12 pages. doi:10.1145/3210586.3210603
- [54] Maarten Van Mechelen, Gökçe Elif Baykal, Christian Dindler, Eva Eriksson, and Ole Sejer Iversen. 2020. 18 Years of ethics in child-computer interaction research: a systematic literature review. In *Proceedings of the Interaction Design and Children Conference* (London, United Kingdom) (IDC '20). Association for Computing Machinery, New York, NY, USA, 161–183. doi:10.1145/3392063.3394407
- [55] Asimina Vasalou, Seray Ibrahim, Michael Clarke, and Yvonne Griffiths. 2021. On power and participation: Reflections from design with developmentally diverse children. *International journal of child-computer interaction* 27 (2021), 100241. doi:10.1016/j.ijcci.2020.100241
- [56] Greg Walsh, Alison Druin, Mona Leigh Guha, Elizabeth Foss, Evan Golub, Leshell Hatley, Elizabeth Bonsignore, and Sonia Franckel. 2010. Layered elaboration: a new technique for co-design with children. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (Atlanta, Georgia, USA) (CHI '10). Association for Computing Machinery, New York, NY, USA, 1237–1240. doi:10.1145/1753326.1753512
- [57] Ge Wang, Jun Zhao, Max Van Kleek, and Nigel Shadbolt. 2022. Informing age-appropriate ai: Examining principles and practices of ai for children. In *Proceedings of the 2022 CHI Conference on Human Factors in Computing Systems*. Association for Computing Machinery, New York, NY, USA, 1–29. doi:10.1145/3491102.3502057
- [58] Jason C. Yip, Kiley Sobel, Caroline Pitt, Kung Jin Lee, Sijin Chen, Kari Nasu, and Laura R. Pina. 2017. Examining Adult-Child Interactions in Intergenerational Participatory Design. In *Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems* (Denver, Colorado, USA) (CHI '17). Association for Computing Machinery, New York, NY, USA, 5742–5754. doi:10.1145/3025453.3025787