

Theory, Experience, and Instinct: How AAA Game Studio UX Leaders Navigate Pre-Production

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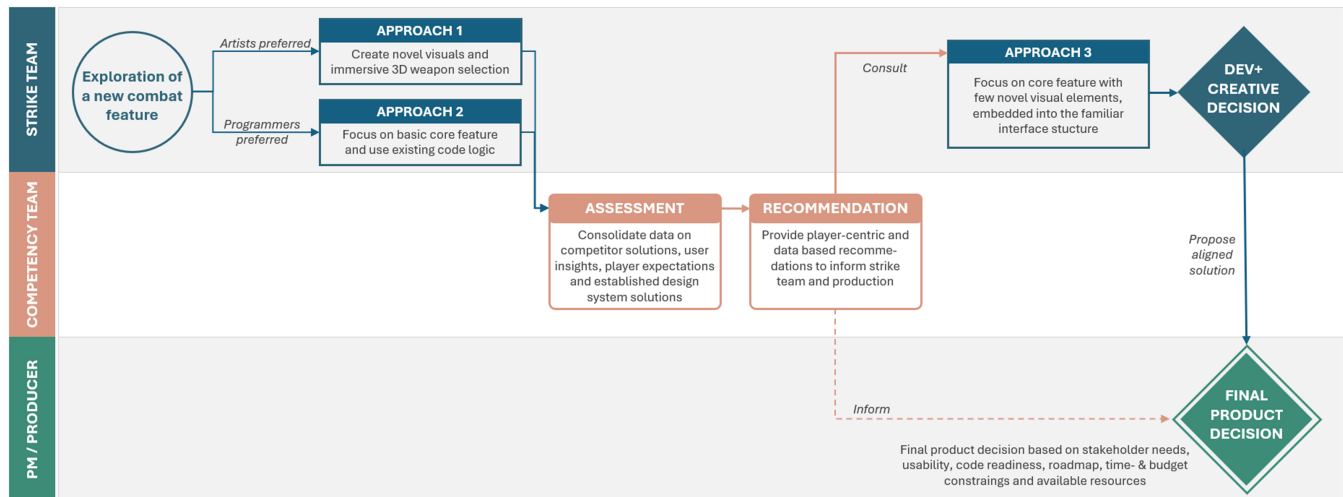


Figure 1: An illustrative example to demonstrate the decision-making process between the strike team, the competency team, and the production management (PM) in developing new features.

Abstract

Academic frameworks have limited practical application in game pre-production because they do not map well to industry contexts and constraints. Through semi-structured interviews with 15 senior UX leaders from AAA game studios, we examined how practitioners make design decisions during early development. Our findings

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show a tripartite approach: (1) academically-grounded translation, where practitioners selectively adapt formal theories; (2) experience-based codification, where teams systematize tacit knowledge into reusable artifacts; and (3) intuitive gut feeling, where expertise guides decisions without formal frameworks. We introduce organizational structures (i.e., strike teams and competency teams) that shape how academic knowledge is translated in practice. Our work challenges the traditional view that practitioners should directly apply academic theory. Academia's unique opportunity here is to provide the conceptual building blocks that enable solutions practitioners need. A change that begins with knowing how practitioners already translate academic knowledge into actionable practice.

CCS Concepts

• Human-centered computing → Empirical studies in HCI.

Keywords

UX Design, Expert Interviews, Game Development, Game Industry, Pre-Production

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1 Introduction

Game development is inherently complex, especially during pre-production when designers and developers make foundational decisions about genre, mechanics, and user experience [13, 17]. Academic research has proposed numerous UX frameworks intended to guide game development, ranging from design principles [9, 19, 24] to evaluation methods [2, 7]. However, production is messy and hectic [20, 48], raising questions about whether and how practitioners integrate research into early design stages. This understanding matters for both academia and industry. Research contributions should strive for real-world impact [10], and understanding industry realities helps academia generate applicable theories [25]. Meanwhile, the games industry suffers from chaotic production pipelines [48], lack of UX concern [34], and unhealthy working conditions [32]. Despite longstanding interest in the research-practice gap [16, 47], only limited work examines how senior UX leaders in AAA studios actually navigate pre-production. We focus on AAA because their scale, complexity, and resources provide rich context for understanding both opportunities and constraints. We interviewed directors and leads because they have strategic influence over UX decisions in high-budget environments [29]. Our study addresses two research questions:

RQ1: How do AAA UX leaders approach design decision-making during early game development?

RQ2: What organizational structures shape how academic practices are incorporated into AAA production?

From our preliminary results, we identify three overlapping approaches practitioners use to navigate complexity during pre-production: (1) academically-grounded translation, (2) experience-based codification, and (3) intuitive gut feeling. Second, we uncover organizational structures (i.e., strike teams and competency teams) that shape how academic knowledge is translated in AAA contexts. Together, these findings challenge the traditional applicationist view that practitioners should directly apply academic theory. We argue instead that academia must provide malleable conceptual tools that support practitioners' existing, highly-adaptive design processes.

2 Related Work

Game development requires coordination across art, engineering, and design [8], with fluid roles [26], which demand reactive processes [21]. The *Game Development Life Cycle* includes six stages, with pre-production focused on developing design concepts, mechanics, and aesthetics [3]. Most work focuses on player experiences

rather than developer practices [1, 18]. Empirical research has investigated the disconnect between theory and practice [4, 38]. Whitson [48] draws attention to the gap between scholarly conceptualizations and the messy realities of collaborative development. However, most work focuses primarily on player experiences rather than developer perspectives and practices [1, 18], which means it rarely engages with typical GDLC realities, particularly pre-production stages.

Velt et al. [47] identifies this as stemming from disconnects between high-level theory and low-level practice [22, 40], as well as differing goals such as the pursuit of generalizable knowledge versus situated solutions [23, 35]. They emphasize translating knowledge into actionable insights through intermediate design knowledge [28]. Norman [36] introduces the *Translational Developer*, a hybrid role, which transforms research into industry tools. However, design relies on tacit knowledge and Instinct [43, 46, 49], with gut feeling serving as cultivated expertise that enables designers to navigate ill-defined problems [33]. In HCI, the concept of *ways of knowing* emphasizes that methodological traditions shape what counts as evidence [37].

3 Methodology

3.1 Participant Table

Expert ID	Role ^a	Experience ^b
 Expert 1	UI Lead	20 years+
 Expert 2	UX Content Director	20 years+
 Expert 3	UI/UX Lead	10 years+
 Expert 4	Senior UX Designer	5 years+
 Expert 5	Creative/Game Director	15 years+
 Expert 6	UI/UX Lead	25 years+
 Expert 7	Senior Product Designer	5 years+
 Expert 8	UI/UX Director	25 years+
 Expert 9	UI Designer	5 years+
 Expert 10	Senior UX Designer	15 years+
 Expert 11	UX Director	10 years+
 Expert 12	UX Director	25 years+
 Expert 13	UX Director	25 years+
 Expert 14	UX Director	15 years+
 Expert 15	Senior UI Artist	5 years+

^a The participants we interviewed come from or have formerly worked for: Blizzard Entertainment, Electronic Arts Digital Illusions CE (EA DICE), Guerrilla Games, Larian Studios, Remedy Entertainment, and Ubisoft.

^b Years of experience are self-reported and grouped into ranges to preserve anonymity.

Table 1: Overview of industry experts, and their respective game development roles.

3.2 Participants

We recruited 15 senior UX and UI design professionals from AAA game studios through an online survey. All held lead, senior, or director-level positions (see Table 1 for details on their roles and experience). We selected them for their strategic influence. They coordinate cross-disciplinary collaboration, shape design strategy, and can restructure processes, which creates opportunities to integrate academic practices. This influence is rarely afforded to junior-

and intermediate designers. AAA studios have large teams and substantial resources allowing sophisticated workflows [5, 6], unlike smaller studios lacking resources for specialized experts [39]. A limitation is that key descriptors (training, gender, specific responsibilities) were omitted for confidentiality. Many hold unique positions within studios, making them identifiable if combined with demographics.

3.3 Procedure

We conducted semi-structured interviews that covered the topics of collaboration, design processes, use of frameworks, and challenges. We transcribed interviews using Dovetail and analyzed the interview data using reflexive thematic analysis [11], which suited our homogeneous dataset and participant numbers [14]. The first author cleaned automated transcriptions and served as the initial coder. We developed an initial codebook from two transcripts, and two researchers iterated to improve the codes across all transcripts. This iterative process continued across all transcripts, with the codebook updated after each phase. Open coding was applied to the transcripts, with relevant codes merged when appropriate. Codes unrelated to the research questions were labelled as *miscellaneous*. For this study, we did not use Dovetail’s artificial intelligence (AI) clustering of themes. Instead, we moved our analysis to Miro¹ to manually organize and explore patterns in the data. To identify themes, codes were affinity-clustered using Miro, and themes were iteratively refined for coherence and internal consistency. All authors collaboratively polished final themes through affinity clustering. We reached saturation after 15 interviews [12].

3.4 Reflexive Interpretation and Tagging (As An Example)

“I think you just have to convince the key people, talk to them. I think there’s no magic solution for this. [...] I happen to be really good friends with the game director. A lot of late night beers, basically, and arguing in bars.”
(Expert 3)

For instance, the quote from Expert 3 was expanded reflexively, highlighting their reliance on informal discussions, negotiations, and personal relationships to guide product direction. Although the team previously attempted to introduce a more structured process, it was not broadly adopted. At present, decision-making is characterized as “arguing about it” or sharing “late night beers” with the game director. In essence, while the team recognizes the absence of a formal framework and the difficulties this creates, they have not pursued one actively, instead favouring a more organic, consensus-driven approach. Later, we observed that Expert 6 and Expert 10 expressed similar perspectives but described this as “gut instinct,” whereas Expert 7 and Expert 12 referred to it more as an internal “feeling.” Accordingly, we consolidated these under the tag “gut feeling” to group similar quotes. It should be noted that this represents a coding tag rather than the development of a theme.

¹Miro is a collaborative whiteboard platform that supports distributed teamwork through visual mapping and organization.

3.5 Positionality Statement

The research team blends expertise from industry and academia, spanning from industry games user researcher (GUR), computer science, and UX game designers. We actively reflected on our assumptions throughout coding and theme development [30, 42].

4 Preliminary Findings

In our work, we focus on pre-production because it represents the critical window where UX decisions have maximum impact later and where practitioners actually have the space to engage with academic practices. Once production begins, teams face deadlines and emergencies, leaving little room for research-informed reflection. In this section, we present our emerging themes for pre-production decision-making.

4.1 Theme 1: Game Design Decision-Making Guided by Theory, Experience, and Instinct

4.1.1 Theory: Academically Grounded, and Research-Driven Decision-Making. Our findings indicate that experts emphasized integrating academic research early in pre-production, at the stage when the project’s foundations are established. As Expert 5 noted, “You need those types of information [research] at the start to guide quick decisions in the future. Because at that point [later in production] you don’t have the time to do it.” Interestingly, experts often did not attribute their work to formal theories. Rather, they “develop their own internal narratives and classifications and names” (Expert 10), with the goal of developing “shared understanding, a language” (Expert 2). However, experts highlighted that frameworks often neglect commercial realities: “[i]n academia, you focus on the users, [i]n industry, we also have to focus on business needs and team constraints.” (Expert 9)

Several experts observed that scientific terminology is sometimes referenced without being meaningfully applied, often perceived as alienating to colleagues without research backgrounds:

“I can talk about self-determination theory in my design, but actually never do a design that caters to that [...] they are mainly using it for selling their work better off [...] So that’s gonna end up as a failure.” (Expert 2)

4.1.2 Experience: Semi-Structured, Industry-Informed Decision-Making. Many practitioners described approaches built from accumulated professional experience rather than directly from literature. These took the form of internal guidelines, style guides, “interaction bibles,” or design pillars (i.e., documents codifying best practices while aligning cross-disciplinary teams).

“Another team is working on a little feature prototype [...] so we try to provide them with a documentation saying [...] these are the rules that you should take into consideration.” (Expert 8)

From our findings, our experts note that they must consider hundreds of connected interfaces across multiple platforms. Many experts rejected comparisons between games and other digital products and argued that universal frameworks rarely work without customization for game development. However, in our findings, experts emphasized that designers can be highly competent without

formal frameworks as  **Expert 2** notes: “I see a lot of great UX professionals that can do their job fine without them.”

4.1.3 Instinct: Gut-Feeling-Driven Decision-Making. A subset of our experts reported working without formalized UX processes in pre-production.  **Expert 11** highlighted that their team deliberately relies on ad-hoc discussions and consensus-building without following specific frameworks or models. Decision-making relies on designers’ individual expertise and instincts—a gut feeling.  **Expert 3** alluded to designers’ “more intrinsic understanding of things,” while  **Expert 8** argued that “a senior [designer] will work on instinct, they will instantly see that something works or doesn’t.” This reliance on personal judgment was partly linked to various educational backgrounds. Some experts noted that their team members entered the field without formal UX training:

“I’ve seen motion designers become UX designers.. I’ve seen baristas become UX designers... we’re all a mish-mash.” ( **Expert 12**)

However, they cautioned that partial gut-feeling knowledge could be counterproductive as “it can give you a sense of security and false results” ( **Expert 5**).

4.2 Theme 2: Designers Operate in Transversal, Collaborative Roles Across the Production Pipeline

Typical design-oriented frameworks assume designers work in relative isolation and just apply their expertise to well-scoped problems. AAA game development operates differently. Design decisions depend on engineering feasibility, art direction, narrative constraints, business requirements, and production schedules—all at once. These dependencies mean that UX practitioners must negotiate design choices between stakeholders with competing priorities and limited bandwidth. The organizational structures that emerge to manage this complexity shape how (and whether) academic knowledge even enters practice. Experts also consistently emphasized that designers operate in deeply embedded, highly transversal roles that span multiple disciplines, required sustained collaboration to align designs with player needs, technical constraints, and creative vision.

“I work not just with us designers, but with artists, and developers, and engineers and tech designers. Everything to make sure that the direction we set is both feasible, but also that everyone is kind of bought in.” ( **Expert 11**)

Designers described their work as “touching base” with multiple departments—often three or four at a time ( **Expert 1**)—navigating organizational complexity that includes “hierarchy, spread-out teams, different types of producers, and the monetization department” ( **Expert 4**). Experts introduced two collaborative structures managing complexity: **strike teams** and **competency teams**.

4.2.1 Strike Teams (Cross-Functional, Feature-Focused Units). Strike teams—sometimes called *cells*—are small, cross-functional groups formed to rapidly explore, design, and implement specific features. These typically include game design, UX and UI design, programming, and quality assurance (QA). A producer commonly

oversees the team, ensuring work remains within scope and delivers on schedule.

“UI is like a touch point to a lot of the other neighbouring departments. So basically, these are small strike teams which are cross-functional. So let’s say, for instance, one of the team members works on the mini map. Then there will be one member from game design, one UI designers, UI programmers or gameplay programmers, also someone from QA inside.” ( **Expert 1**)

4.2.2 Competency Teams (Expertise-Driven, Discipline-Based Clusters). Competency teams are organized around specialized knowledge (e.g., accessibility, animation, technical UI implementation). They are subject-matter experts serving as the *first point of contact* for domain-specific guidance. Rather than owning features, competency teams provide consultation, establish best practices, and maintain consistency across strike teams. These typically consist of UI technical artists, UX designers, UI programmers, and UI artists reporting to a lead:

“We call that the “presentation team”. UI art plus UX. We also had a UI tech artist, and they were tech-expert enough to discuss directly with the programmers. They were doing reviews with them and were able to say what is feasible and what not.” ( **Expert 14**)

Within these teams, experts emphasized that minimal friction is not always beneficial. Teams collectively examine where friction may support emotional impact, player engagement, or narrative meaning.

5 Discussion

Our preliminary findings show that practitioners navigate pre-production through adaptive strategies rather than direct application of academic frameworks. This challenges the traditional *applicationist view* of academic theory in HCI [47]. However, prior work on the research–practice gap has largely examined production contexts, where time pressure and delivery demands leave practitioners little opportunity to engage with academic knowledge [16]. In smaller studios, flatter team structures give practitioners more direct influence over final design, allowing novel methods and artifacts to circulate effectively [15]. Our focus on pre-production paints a different picture. This is the phase where UX decisions carry the most weight (foundational choices about interaction models, information architecture, and player experience lock in early) and where practitioners have the cognitive bandwidth to explore, adapt, and integrate research. Production becomes a survival phase, where teams execute against locked decisions and struggle with emergencies. Hence, studying pre-production lets us capture the moment when academic contributions could realistically influence practice, and we identify the adaptive strategies practitioners use to make that happen.

5.1 Practitioner-Led Translation and Codifying Tacit Knowledge

From our findings, practitioners draw on academic work but rarely adopt it verbatim, instead extracting core concepts and reframing them for local contexts ( **Theme 1** and  **Theme 2**). They

deconstruct formal theories and rebuild them into shared, localized language, treating scholarship as a resource for collaborative sense-making rather than a rigid blueprint. This aligns with boundary-object theory: such artifacts can adapt to local needs while retaining a common identity [44]. In AAA production, however, tight schedules, stakeholder pressures, and pipeline constraints limit interpretive flexibility, so academic findings often cannot be adapted within development timelines. We therefore argue research should be designed with sensitivity to industry timelines—especially pre-production—and to production constraints and practical applicability, while also attending to intergroup politics and local motivations highlighted by Kimble et al. [27]. In smaller, flatter studios, closer cross-disciplinary communication lets novel methods and artifacts circulate more effectively, though the finished game often remains the primary enduring artifact of collaboration [15, 31, 41].

Practitioners ground their approach in accumulated professional experience and team-specific practices (Theme 1). While they did not formally link these to frameworks, they are often informed by them through studio culture. Teams value such processes for pragmatism and adaptability. This aligns with work that shows expertise is built experientially and resists codification [46]. However, our findings extend this by showing that experience-based approaches do not remain purely tacit. Practitioners actively externalize and stabilize knowledge through shareable artifacts like interaction bibles and design systems. This codification constitutes significant, yet often overlooked, design labour. Hence, we argue that academics should support and study these codification practices as legitimate design activities, allowing them to contribute principles and methods that integrate directly into internal knowledge systems.

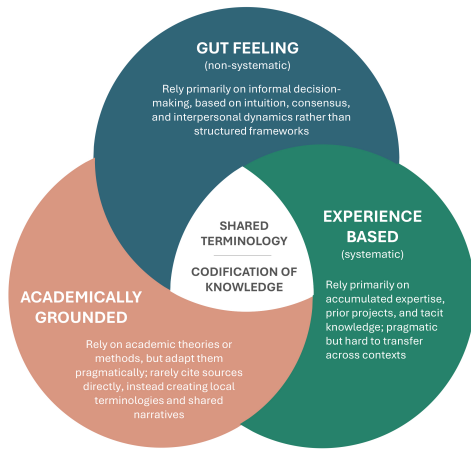


Figure 2: Decision-making approaches and practices prevalent during game development. While projects, teams or company culture might nurture one or more of the three approaches to creative design decision-making, there is no single “right” method; designers move fluidly among approaches depending on context.

Our works-in-progress Figure 2 illustrates how three different approaches to game development overlap and interact in practice.

The intersections shown in the figure represent hybrid zones where the approaches blend together. Shared terminology emerges across all three approaches, while design systems are most prominent at the boundary where experience-based practices and academically grounded methods meet. The figure also contains a surrounding ring that identifies contextual challenges which influence the adoption of each approach, including production pressures, stakeholder dependencies, and the complexity and uniqueness of game production.

5.2 Organizational Structures Shape Translation and Implications for Academic Research

Theme 2 indicates that *strike and competency teams* create a dual-layered structure to balance speed, creativity, and deep domain expertise. Strike teams prioritize rapid iteration and feature delivery, which leaves little space for slower research-driven methods. Competency teams provide specialized guidance but many frameworks lack actionable guidance for translating them into day-to-day AAA development. This extends co-design methodologies [45] by emphasizing that it is not only stakeholders or developers who matter, but multiple teams whose coordination is critical for translating frameworks into practice. AAA contexts demand frameworks that address structural constraints of rapid iteration and decision-making processes across strike teams, competency teams, and production management.

Our work suggests that academia’s role is to provide empirically-grounded directives serving as high-level starting points instead of dictating procedures. Practitioners can then invent and adapt context-specific processes. Thus, academic contributions should:

- (1) **Design with sensitivity to pre-production timelines** and production constraints to function as effective boundary objects.
- (2) **Treat codification practices as legitimate design activities**, contributing methods integrating into internal knowledge systems.
- (3) **Address structural constraints** of rapid iteration and coordination across multiple teams and stakeholders.

6 Limitations and Conclusion and Future Work

Our study has some limitations. We omitted essential participant descriptors for confidentiality. Future research could expand to different studio sizes, roles, and development stages. Longitudinal studies tracking design strategies from pre-production through post-launch could clarify how practices evolve. We plan to complete our analysis and produce a practical model aimed at bridging research and practice, prioritizing adaptability, usability, and alignment with practitioners’ workflows (see Figure 2). This model will be evaluated in partnership with industry teams, including strike teams and competency teams, to refine its fit and impact (see Figure 1).

Practitioners translate academic knowledge through three complementary modes: academically grounded translation, experience-based codification, and intuitive judgment. These modes do not operate in isolation; they are shaped by organizational arrangements such as strike teams and competency teams, which mediate how theory is interpreted and applied in day-to-day design work.

We argue instead that academia must provide malleable conceptual tools supporting practitioners' existing, highly-adaptive design processes.

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References

- [1] Lucy A. Sparrow, Martin Gibbs, and Michael Arnold. 2021. The Ethics of Multi-player Game Design and Community Management: Industry Perspectives and Challenges. In *Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems* (Yokohama, Japan) (CHI '21). Association for Computing Machinery, New York, NY, USA, Article 325, 13 pages. doi:10.1145/3411764.3445363
- [2] Vero Vanden Abeele, Katta Spiel, Lennart Nacke, Daniel Johnson, and Kathrin Gerling. 2020. Development and validation of the player experience inventory: A scale to measure player experiences at the level of functional and psychosocial consequences. *International Journal of Human-Computer Studies* 135 (2020), 102370. doi:10.1016/j.ijhcs.2019.102370
- [3] A. Aktaş and E. Orçun. 2014. a survey of computer game development. *the journal of defense modeling and simulation applications methodology technology* 13 (2014), 239–251. Issue 2. doi:10.1177/1548512914554405
- [4] Shahrel Nizar Baharom, Wee Hoe Tan, Mohammad Zaffwan Idris, et al. 2014. Emotional design for games: A framework for player-centric approach in the game design process. *International Journal of Multimedia and Ubiquitous Engineering* 9, 10 (2014), 387–398. doi:10.14257/ijmue.2014.9.10.37
- [5] Björn Berg Marklund, Henrik Engström, Marcus Hellkvist, and Per Backlund. 2019. What empirically based research tells us about game development. *The Computer Games Journal* 8, 3 (2019), 179–198. doi:10.1007/s40869-019-00085-1
- [6] Alexander Bernevega and Alex Gekker. 2022. The industry of landlords: Exploring the assetization of the triple-A game. *Games and Culture* 17, 1 (2022), 47–69. doi:10.1177/15554120211014151
- [7] Regina Bernhaupt. 2015. *User Experience Evaluation Methods in the Games Development Life Cycle*. Springer International Publishing, Cham, 1–8. doi:10.1007/978-3-319-15985-0_1
- [8] Ken Birdwell. 2006. *The cabal: Valve's design process for creating Half-Life*. The MIT Press, Cambridge, 212–225 pages.
- [9] Staffan Bjork and Jussi Holopainen. 2005. *Patterns in game design*. Vol. 11. Charles River Media Hingham, Needham, Massachusetts.
- [10] Lutz Bornmann. 2013. What is societal impact of research and how can it be assessed? a literature survey. *Journal of the American Society for Information Science and Technology* 64, 2 (2013), 217–233. doi:10.1002/asi.22803
- [11] V. Braun and V. Clarke. 2021. Can I use TA? Should I use TA? Should I not use TA? Comparing reflexive thematic analysis and other pattern-based qualitative analytic approaches. *Counselling And Psychotherapy Research* 21 (2021), 37–47. doi:10.1002/capr.12360
- [12] Virginia Braun and Victoria Clarke. 2021. To saturate or not to saturate? Questioning data saturation as a useful concept for thematic analysis and sample-size rationales. *Qualitative Research in Sport, Exercise and Health* 13, 2 (March 2021), 201–216. doi:10.1080/2159676X.2019.1704846
- [13] Heather Maxwell Chandler. 2009. *The game production handbook*. Jones and Bartlett Publishing Co, Burlington, Massachusetts, United States.
- [14] Victoria Clarke and Virginia Braun. 2017. Thematic analysis. *The Journal of Positive Psychology* 12, 3 (May 2017), 297–298. doi:10.1080/17439760.2016.1262613
- [15] Richard Colby and Rebekah Shultz Colby. 2019. Game design documentation: Four perspectives from independent game studios. *Communication Design Quarterly Review* 7, 3 (2019), 5–15. doi:10.1145/3321388.3321389
- [16] Lucas Colusso, Cynthia L. Bennett, Gary Hsieh, and Sean A. Munson. 2017. Translational Resources: Reducing the Gap Between Academic Research and HCI Practice. In *Proceedings of the 2017 Conference on Designing Interactive Systems* (Edinburgh, United Kingdom) (DIS '17). Association for Computing Machinery, New York, NY, USA, 957–968. doi:10.1145/3064663.3064667
- [17] Chris Crawford. 2003. *Chris Crawford on game design*. New Riders, Toronto, Canada.
- [18] Maarten Denoo and Elena Petrovskaya. 2025. Developer dialogues: a study of game creators to understand the potential for industry self-regulation of monetization. *Information, Communication & Society* 1 (2025), 1–20. doi:10.1080/1369118X.2025.2467343
- [19] Luiz Cláudio Silveira Duarte and André Luiz Battaiola. 2017. Distinctive features and game design. *Entertainment Computing* 21 (2017), 83–93. doi:10.1016/j.entcom.2017.03.002
- [20] Henrik Engström. 2020. *Game development research*. University of Skövde, Skövde, Sweden. ISBN: 978-91-984918-8-3.
- [21] Mirko Ernkqvist and Patrik Ström. 2018. Differentiation in digital creative industry cluster dynamics: the growth and decline of the Japanese video game software industry. *Geografiska Annaler: Series B, Human Geography* 100, 3 (2018), 263–286. doi:10.1080/04353684.2017.1423506
- [22] William Gaver. 2012. What should we expect from research through design?. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (Austin, Texas, USA) (CHI '12). Association for Computing Machinery, New York, NY, USA, 937–946. doi:10.1145/2207676.2208538
- [23] Elizabeth Goodman, Erik Stolterman, and Ron Wakkary. 2011. Understanding interaction design practices. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (Vancouver, BC, Canada) (CHI '11). Association for Computing Machinery, New York, NY, USA, 1061–1070. doi:10.1145/1978942.1979100
- [24] Robin Hunicke, Marc LeBlanc, Robert Zubek, et al. 2004. MDA: A formal approach to game design and game research. In *Proceedings of the AAAI Workshop on Challenges in Game AI*, Vol. 4. Northwestern University, San Jose, CA, 1722. <https://users.cs.northwestern.edu/~hunicke/MDA.pdf>
- [25] Tobias Karlsson, Jenny Brusk, and Henrik Engström. 2023. Level design processes and challenges: A cross section of game development. *Games and Culture* 18, 6 (2023), 821–849. doi:10.1177/15554120221139229
- [26] Tobias Karlsson, Yukiko Sato, and Shuichi Kurabayashi. 2020. Investigating the elusive role of level design. In *2020 IEEE Conference on Games (CoG)*. IEEE, Osaka, Japan, 584–587. doi:10.1109/CoG47356.2020.9231624
- [27] Chris Kimble, Corinne Grenier, and Karine Goglio-Primard. 2010. Innovation and knowledge sharing across professional boundaries: Political interplay between boundary objects and brokers. *International journal of information management* 30, 5 (2010), 437–444. doi:10.1016/j.ijinfomgt.2010.02.002
- [28] Jonas Löwgren. 2013. Annotated portfolios and other forms of intermediate-level knowledge. *Interactions* 20, 1 (2013), 30–34. doi:10.1145/2405716.2405725
- [29] Paul Martin. 2018. The intellectual structure of game research. *Game Studies* 18 (2018), 1. https://www.gamestudies.org/1801/articles/paul_martin
- [30] Tim May, Beth Perry, et al. 2014. Reflexivity and the practice of qualitative research. *The SAGE handbook of qualitative data analysis* 109 (2014), 109–122.
- [31] Rudy McDaniel and Alice Daer. 2016. Developer discourse: Exploring technical communication practices within video game development. *Technical Communication Quarterly* 25, 3 (2016), 155–166. doi:10.1080/10572252.2016.1180430
- [32] Joana Mendes and Cristina Queirós. 2022. It's Crunch Time: Burnout, Job Demands and Job Resources in Game Developers. In *Videogame Sciences and Arts*, Inês Barbedo, Bárbara Barroso, Beatriz Legerén, Licínio Roque, and João Paulo Sousa (Eds.). Springer International Publishing, Cham, 46–58.
- [33] Pietro Micheli, Sarah JS Wilner, Sabeen Hussain Bhatti, Matteo Mura, and Michael B Beverland. 2019. Doing design thinking: Conceptual review, synthesis, and research agenda. *Journal of Product innovation management* 36, 2 (2019), 124–148.
- [34] Hugo Mitre-Hernandez, Carlos Lara-Alvarez, Mario Gonzalez-Salazar, Jezreel Mejia-Miranda, and Diego Martin. 2016. User eXperience Management from Early Stages of Computer Game Development. *International Journal of Software Engineering and Knowledge Engineering* 26, 08 (2016), 1203–1220. arXiv:<https://doi.org/10.1142/S021819401650042X> doi:10.1142/S021819401650042X
- [35] Harold G. Nelson and Erik Stolterman. 2012. *The Design Way: Intentional Change in an Unpredictable World*. MIT Press, Cambridge, MA.
- [36] Donald A. Norman. 2010. The research-practice gap: The need for translational developers. *Interactions* 17, 4 (2010), 9–12. doi:10.1145/1806491.1806494
- [37] Judith S Olson and Wendy A Kellogg. 2014. *Ways of Knowing in HCI*. Vol. 2. Springer Publishing Company, Incorporated, New York, US.
- [38] Zoë O'Shea and Jonathan Freeman. 2019. Game design frameworks: where do we start?. In *Proceedings of the 14th International Conference on the Foundations of Digital Games* (San Luis Obispo, California, USA) (FDG '19). Association for Computing Machinery, New York, NY, USA, Article 25, 10 pages. doi:10.1145/3337722.3337753
- [39] Fábio Petrillo, Marcelo Pimenta, Francisco Trindade, and Carlos Dietrich. 2009. What went wrong? A survey of problems in game development. *Computers in Entertainment (CIE)* 7, 1 (2009), 1–22. doi:10.1145/1486508.1486521
- [40] Y. Rogers. 2004. New theoretical approaches for human-computer interaction. *Annual Review of Information Science and Technology* 38 (2004), 87–143. Issue 1. doi:10.1002/aris.1440380103
- [41] Judd Ruggill, Ken McAllister, Randy Nichols, and Ryan Kaufman. 2016. *Inside the video game industry: Game developers talk about the business of play*. Routledge,

- United Kingdom.
- [42] Johnny Saldaña. 2025. *The coding manual for qualitative researchers*. SAGE Publications Ltd, USA.
- [43] Johanna Schindler. 2015. Expertise and tacit knowledge in artistic and design processes: Results of an ethnographic study. *Journal of Research Practice* 11, 2 (2015), 1–22.
- [44] Susan Leigh Star and James R Griesemer. 1989. Institutional ecology, translations' and boundary objects: Amateurs and professionals in Berkeley's Museum of Vertebrate Zoology, 1907–39. *Social studies of science* 19, 3 (1989), 387–420. doi:10.1177/030631289019003001
- [45] Marc Steen. 2013. Co-design as a process of joint inquiry and imagination. *Design issues* 29, 2 (2013), 16–28.
- [46] Miriam Sturdee, Matthew Ivory, David Ellis, Patrick Stacey, and Paul Ralph. 2022. Personality Traits in Game Development. In *Proceedings of the 26th International Conference on Evaluation and Assessment in Software Engineering* (Gothenburg, Sweden) (EASE '22). Association for Computing Machinery, New York, NY, USA, 221–230. doi:10.1145/3530019.3530042
- [47] R. Velt, S. Benford, and S. Reeves. 2020. Translations and boundaries in the gap between hci theory and design practice. *Acm Transactions on Computer-Human Interaction* 27 (2020), 1–28. Issue 4. doi:10.1145/3386247
- [48] J. R. Whitson. 2018. What can we learn from studio studies ethnographies?: a “messy” account of game development materiality, learning, and expertise. *Games and Culture* 15 (2018), 266–288. Issue 3. doi:10.1177/1555412018783320
- [49] WLP Wong and David F Radcliffe. 2000. The tacit nature of design knowledge. *Technology analysis & strategic management* 12, 4 (2000), 493–512. 10.1080/713698497