Routledge
Taylor & Francis Group

Media Practice and Education

ISSN: (Print) (Online) Journal homepage: www.tandfonline.com/journals/rjmp21

Intercultural knowledges and practices in postgraduate game design and making education: insights from a UK-based degree

Bruno de Paula

To cite this article: Bruno de Paula (20 Jul 2024): Intercultural knowledges and practices in postgraduate game design and making education: insights from a UK-based degree, Media Practice and Education, DOI: 10.1080/25741136.2024.2378394

To link to this article: https://doi.org/10.1080/25741136.2024.2378394

Published online: 20 Jul 2024.

MEDIA PRACTICE AND EDUCATION
https://doi.org/10.1080/25741136.2024.2378394

Intercultural knowledges and practices in postgraduate game design and making education: insights from a UK-based degree

Bruno de Paula

Culture, Communication and Media, IOE, Faculty of Education and Society, University College London, London, UK

ABSTRACT

In this paper, I explore my experience around teaching a digital game design and making postgraduate course in an intercultural setting in the UK Higher Education. I focus on how locality and disciplinary aspects create and mediate hierarchies of knowledges and practices that shape this kind of course, and how the intercultural setting studied here affords critical interrogations about the supposed universal nature of game design, as a field and as a practice. In particular, I examine an educational approach adopted in this course centred on the critical pedagogy notion of 'cultural work' and on philosophy of technology, rejecting mechanistic approaches to game design and making in favour of thinking with and through tools and processes. Through interviews with former students around their expectations about learning game design and making and their (changing) perspectives during this course, I explore how such an approach can create educational experiences for both students and game educators to build different (i.e. more critical and diverse) knowledge and practice foundations for those who will be working in/with games in the future as well as developing new vistas for understanding game design and making not as universal but as practices heavily informed by specific contexts.

ARTICLE HISTORY
Received 22 April 2024
Accepted 7 July 2024

KEYWORDS
Games education; Higher education; Critical pedagogies; Game design; Game-making; Vilém Flusser

Introduction

The main inspiration for this work emerged from a class in late March 2022. It was the third time I was concluding a Digital Game Design course, part of a master's in digital media production at my university in England. I could see students twitching, waiting to be dismissed. Despite the physical and intellectual tiredness, caused both by planned (e.g. teaching the same session twice every week, since our studio could not accommodate all students at once) and unplanned (e.g. strike action) circumstances, I was satisfied with the result and could only think how great it was to teach without any of the

CONTACT Bruno de Paula bruno.depaula@ucl.ac.uk UCL Knowledge Lab, Culture, Communication and Media, IOE, Faculty of Education and Society, University College London, 23–29 Emerald St, London WC1N 3QS, UK

major disruptions caused by the pandemic, as it happened in previous years. With the class over, I could see that students were happy, many were already working hard on their assignments and dissertations and others were planning what they would do during the Spring break; I started preparing for my leave when two students approached me to have a word.

While these two students appreciated our – mine and other educators' – efforts, they were frustrated with the quality of the course. When asked why, they moved onto a list of suggestions that would enhance this learning experience: they wanted more classes, less time on theories, and more in-class game engine[1] practice, complemented by homework – practical exercises that should be marked and individually commented by staff every week. They wanted individual time to discuss their ideas and projects with staff every week and, to my surprise, a final written test, so their knowledge could be checked, offering a clear benchmark of what they learned and a clearer way of ranking them against their peers. Perplexed, I started formulating answers when these two students (probably noticing my surprise) moved on to justify why they were suggesting this. One of them compared their learning experiences in this course to the one a former colleague of his was receiving in China (where both students were from), and how they were, in their perception, 'falling behind' their colleagues 'back at home'. Using his laptop, he opened a scene his colleague studying in China had recently produced as their coursework – a tri-dimensional, idyllic beach-like resort with oversexualised female characters in beach attire, presented as a tech demo to showcase skills in manipulating shaders and real-time rendering. The final comment, summarising their frustrations, stuck with me: 'What we did here in this class … you know, everyone can be a *game planner*.[2] But this [pointing at the screen], **this is a real skill**'.

With this anecdote, my goal is not to discuss my failures as a lecturer or to complain about students with very specific views about what/how they should be taught at postgraduate level. This exchange was one more instance in which, following the usual reflective practitioner tradition (Schön 1991), I was made to think about different models of games education, including reflecting on what a course named as 'digital game design' within a broader digital media course and within a highly intercultural environment (i.e. a Latin American educator, teaching a cohort composed mostly of Chinese students, in an English university), should be about. After all, what is game design, and how the different actors involved in this learning experience understood this concept?

Weiller (2021) argues that game design is an ambiguous term and its definition depends on the interlocutor, with answers being as general – 'everything that goes into a game' – or as specific – '[…] game mechanics, or level design […] or storytelling in games' – as possible. It becomes easier, then, to define game design through negation, and considering its historical constitution as a field of knowledge stemming from mostly professional practice (Lankoski and Holopainen 2017), looking at professional settings such as major studios in mainstream spaces (e.g. USA, Western Europe, Japan), for example, it would be possible to consider game design to be dependent, but distinct from, say, programming, animating or visual art and audio production (Weiller 2021).

Such ambiguity, however, sets the tone for game design to become a 'buzzword' (Fernández-Vara 2019), an empty vessel into which different actors, including students, can end up projecting whatever they want. The work presented here stems from a context in which 'game design' is more than often assumed by students to be a synonym for 'game development'. While these two practices are related and often linked in the

context of Higher Education (HE) – Larsen (2018), for instance, highlights the 'messiness' implicated in teaching game design in HE[3] – it is not uncommon to notice an expectation that an emphasis on software teaching and so-called 'hard skills' will be the main focus. This hierarchy of knowledges (Cruz 2021; Freire 2000) has deep consequences for how future game-makers understand their own practice and the field they are – or will become – part of, as recently captured by Keogh and Hardwick (2023, 6):

> Just as for cultural practitioners more broadly, the predominance of the technical at the expense of the creative has had a limiting impact on how the activities of videogame developers themselves have been understood as both highly skilled knowledge workers and as cultural workers developing a practice.

With this reflection, my goal is not necessarily to reject the importance of so-called 'hard skills' (such as working with game engines) or to, as criticised by other authors (Keogh and Hardwick 2023; Malazita, Rouse, and Smith 2024), adopt a non-reflexive stance that is subservient to students as consumers, reifying the neoliberal project at full steam in Western HE (Ingleby 2015). My goal here is to examine the different views on 'game design' in a particular intercultural and interdisciplinary setting of contemporary Western HE – an 'isolated' game design and making course within a broader digital media postgraduate degree in the UK. Through this exploration, I discuss how a particular approach, one inspired by Freire's (2000; 2005) critical pedagogies and Flusser's (2000; Mota e Silva 2022) philosophy of technology, can yield a relevant path to challenging existing hierarchies of knowledges in games while affording students the opportunity to become critically-informed game designers and makers.

Teaching games: orientations, hierarchies of knowledges and 'Game designs'

The work here is related to the growing body of research dedicated to the teaching of games in HE settings. In recent years, authors have examined the nature and orientation of game-related courses curricula (Keogh and Hardwick 2023; Rouse and Malazita 2023; Zagal 2013; Zagal and Bruckman 2008), students' motivations and expectations (Ashton 2009; Harvey 2020) and the respective responses from educators in such educational endeavours (Phelps and Consalvo 2020; Wu 2023; Zagal and Bruckman 2008). There is also a significant body of research on specific pedagogic strategies for teaching games (design and making) in HE in different and often overlapping orientations, including those aligned to critical theories (Bettochi, Klimick, and Perani 2020; Geyser 2018; Rouse and Malazita 2023), to industry (Weiller 2021), to serious games/game-based learning (Larsen 2018) and to art practice/experimental approaches (Phelps and Consalvo 2020; Westecott 2020).

While this paper resonates with this body of research, there is at least one key distinction in the context of this work. Despite the presence of some geographical diversity – most of them focusing on the USA, Canada or Western Europe, with examples hailing from the Global South (Bettochi, Klimick, and Perani 2020; Geyser 2018; Weiller 2021) and Japan (Zagal 2013) – intercultural elements are practically limited to disciplinary aspects[4]: cultural differences in classrooms are mostly related to students' academic backgrounds (e.g. Phelps and Consalvo 2020) or even to how familiar/encultured in (mainstream) gaming culture they might be (Zagal and Bruckman 2008). While 'disciplinary'

aspects are also part of the intercultural elements of my game design classroom – this is a 'general' digital media practice degree attracting students from diverse backgrounds and interests – this is also a site of intercultural learning, where localities play a significant role.

Localities are relevant to how we recognise, engage with, make sense and research games: it is not enough to talk about one single game culture when it is well-documented how particular local (sociocultural-material) conditions shape our relationship with games (Penix-Tadsen 2019; Pérez-Latorre and Navarro-Remesal 2021; Swalwell 2021). Recognising these influences is important since, as argued by Malazita, Rouse and Smith (2024, np)

> We game researchers – both in our programs and in games programs across the world – are training future generations of researchers [and players, and practitioners] who will be shaped by game research as a field, with an implicit canon, with a legitimized set of scholarly and political practices.

In this sense, our – game researchers/educators – role becomes that of, following Freire's (2005) critical pedagogies, cultural workers. In the context of this work, I argue that we, game educators, act as cultural workers in mediating and addressing the different hierarchies of knowledges (Cruz 2021; Freire 2000) that might constitute games as a field of knowledge, as discussed by Malazita and colleagues (2024, np), for example in the 'implicit canon [and] legitimized set of scholarly and political practices'.

This includes, therefore, recognising how different local realities not only shape how we engage with games but also 'shape our shaping': as an example, Malazita and colleagues (2024) discuss how in their Global North (US and Scandinavian) context, game programmes framed as interdisciplinary are well-funded, despite the recent attacks to creative disciplines funding in academia. That is not – and, to some extent, has never been – the realities of several game scholars across the globe, especially in the Global South, where funding has been scarce and games are often seen, at best, as an afterthought. Without this consideration, we might end up replicating the same processes, obfuscating and reproducing certain hierarchies of knowledges. Recognising our – game scholars/educators – role in challenging, rather than reinforcing, those hierarchies of knowledges is not trivial and this is a process that must be done in all levels, macro – i.e. regarding research (e.g. Trammell 2022) and game production practices (e.g. Stateri and Souza 2021) – but also micro – i.e. in our classrooms (Geyser 2018; Wu 2023). In this paper, I focus on the latter.

In my opening anecdote, an attentive reader will notice that the student used the term 'game planner'. During my time teaching games in the UK, students from a Chinese background often used the term 'game planning' to refer to a particular set of activities (e.g. refining game mechanics, game balancing) that, under my Latin American (working in the Global North) perspective, would be the competence of a 'game designer'. It took me some time and some research to realise that students were not necessarily 'making up' a new denomination but using a literal translation of terms they would find in their local contexts.[5] This difference in terminology ended up amplifying the 'empty vessel' issue on the term 'game design' and explains why students often were confused or frustrated why, in a 'game design' course, they were being asked to focus on 'game planning'.

Ignoring these specificities can have deep consequences. Even from a 'functionalist' perspective – e.g. one that sees that the main purpose of HE is providing job-readiness

– ignoring these particularities can become problematic, considering how several students come into this course to find a way into the (Chinese) games industries.

In this sense, we cannot ignore the idiosyncrasies of professional game development in China. The popular perception – among Chinese and non-Chinese audiences – tends to associate Chinese game production with a general 'lack of creativity' in game development (Gong and Xin 2019), focusing mostly on mobile games heavily reliant on microtransactions, or companies known for performing outsourcing tasks for Western AAA[6] games (Bulut 2020; Thomsen 2018; Nakamura and Wirman 2021). While professional game development in China is not limited to these spaces, with authors detailing how, especially since the 2010s, there has been a clearer interest in developing AAA games akin to those produced by Western companies (Chan 2022; Kong 2024), or the rise of indie[7] studios akin to its Western counterparts (Nakamura and Wirman 2021), most of the (secure) jobs in Chinese games industries are still associated to mobile game development (usually with creative constraints) or outsourcing, demanding a particular type of professional and skillset. This is especially true for 'indie' studios, since 'entrepreneurial' routes – akin to those well-known in the West, including their link to job precarity, as discussed by different authors such as Keogh (2023) or Chia (2019) – are still difficult to be pursued due to local factors in China such as a constant change in policy, a favouring of larger companies over small entrepreneurs and a lack of policies specific to gaming, as detailed by Huang (2024). These considerations, however, should not be employed to defend a teaching model that aims solely at 'job-readiness' (anywhere) but to contextualise why certain students, coming from a particular context and with particular objectives, might project particular expectations onto 'game design' as a course within a HE degree.

More importantly, beyond a functionalist view towards a supposed 'job-readiness', such considerations about locality have important implications for knowledge production. Ignoring or 'correcting' students' use of the term 'planner', suggesting they substitute it for 'designer', without any contextualisation on the intercultural differences, would mean simply reinforcing existing hierarchies of knowledges that end up driving these students to seek a degree in the Global North after considering that their own (media) histories, knowledges and practices are inferior to Western ones, as discussed by Gu and O'Connor (2019) in their study of interculturality in Australian creative industries HE.

My argument here is not that we must be necessarily subservient to specific knowledges and realities but recognise the existence and relevance of multiple knowledges. Rejecting hierarchies of knowledges does not mean rearranging deck chairs and promulgating other kinds of knowledge as 'new' universal forms, e.g. changing the terminology from 'game designer' to 'game planner' in all contexts; the goal here is not to, following Freire (2000), transform oppressed into oppressors. It means, however, doing our role – following Malazita and colleagues (2024) and Freire (2005) – as cultural workers shaping the future of the field and that often includes promoting intercultural dialogue and expanding horizons.

This shaping process is not only grounded on local differences but can also be related to disciplinary ones, including going beyond ideas that consider that gaming education should solely revolve around software usage and technical skills, as criticised earlier (Keogh and Hardwick 2023; Rouse and Malazita 2023).

In the case discussed here, my approach to teaching game design and making is informed by Flusser's (2000) philosophy of technology. While some authors (Fizek 2022; Sicart 2023) recruited Flusser's work to theorise games, in my approach, I rely on his concepts of apparatuses and functionaries, written in the 1980s in relation to photography (Flusser 2000). Flusser (2000, 32) sees apparatuses as

> black boxes that simulate thinking in the sense of a combinatory game using number-like symbols; at the same time, they mechanize this thinking in such a way that, in future, human beings will become less and less competent to deal with it and have to rely more and more on apparatuses. […] Even apparatuses that are not fully automated (those that need human beings as players and functionaries) play and function better than the human beings that operate them.

Apparatuses are not limited to the programmable devices in the computing sense, but 'systems that reproduce previously established codes, materialize and reproduce these models' (Mota e Silva 2022, 5). There is always a lingering danger that apparatuses transform their users – us – into what he names functionaries, 'a person who plays with apparatus and acts as a function of apparatus' (Flusser 2000, 85). Discussing how the (analogue) photographic camera works as an apparatus, transforming photographers into functionaries, Flusser (2000, 26–27) argues that

> If [photographers] look through the camera out into the world, this is not because the world interests them but because they are pursuing new possibilities of producing information and evaluating the photographic program. Their interest is concentrated on the camera; for them, the world is purely a pretext for the realization of camera possibilities.

The photographic act becomes then a game, one in which photographers – functionaries – both control and are controlled by the camera – apparatus. The control exerted by the functionary is via input/output (the apparatus depends, in this case, on the functionary agency), but at the same time, the functionary's agency is limited by the apparatus. More importantly, the functionary becomes trapped in a 'game' – i.e. trying to exhaust the possibilities of the apparatus' programs – they cannot win, simply working for the apparatus, reproducing its pre-programmed concepts. But how does a work about photography can be relevant for game design and making?

Keogh's (2022) recent work discussing game-making as a craft offers an interesting parallel. Based on his interviews with Australian game-makers, Keogh (2022, 381) argues that

> [the game engine] Unity's promise of openness, of being able to fulfil the designer's every intent and dream, is restricting rather than empowering, effectively producing a 'loose' and empty possibility space in which the creator struggles to position themselves.

The 'empty possibility space', here, can be understood as an apparatus' call for a functionary, the disorienting force of the 'permutation game of possibilities' the apparatus invites the functionary to play. The designer becomes then ensnared in the universe of possibilities offered by the apparatus, obfuscating the engagement between the individual/user and the world, with this engagement becoming nothing more than a pretext to explore and fulfil the possibilities offered by the apparatus. Moreover, the supposed easiness offered by an apparatus can overtake our ability to think conceptually (Flusser 2000). Transposing these ideas again to game engines, Nicoll and Keogh (2019) single out how easy it is to make a first-person (shooter) game in Unity: through a set of ready-made

assets and prefabs, putting together something that resembles a first-person environment can be made in no more than a few minutes. What are the constraints and affordances of game engines (i.e. the existence of ready-made assets that simplify certain kinds of work), if not explicit elements from an apparatus' programme?

As game designers and makers, therefore, we must understand the programmes[8] within apparatuses and be ready to rework and reinscribe them in our own favour, rejecting them becoming a mere function of these. This, in the context of game design and making, requires, therefore, more than a 'how to' mechanistic type of thinking, one that goes beyond simply using – and, in Flusser's (2000) philosophy, being 'used by' – specific tools; it demands understanding the programmes in apparatuses and that depends on broader critical understandings of norms and contexts, as defended by different authors in the context of design and making (Cruz 2021; Phelps and Consalvo 2020).

In this paper, therefore, I discuss how such ideas about game design and making, and learning about game design and making, were operationalised and engaged with by different actors in an intercultural learning environment. Here, I focus on former students' expectations about learning game design and making, and how their understandings and ideas – about games, about game design and making – might have shifted after this course, including in relation to the different hierarchies of knowledges about what is relevant – and what is not – to engage with and make games. Through interviews with former students, supported by brief reflections on my teaching, my goal is to discuss how educational processes can shift perspectives and, paraphrasing Malazita and colleagues (2024), build different – as in more critical and diverse – foundations for those who will be working in/with games in the future.

Context & methods

This paper is part of a larger project, in which I investigated the motivations and main takeaways from international students, mostly from China, to study a practice-related digital media master's in a so-called elite university in the UK. In this paper, I focus specifically on my teaching about digital games through three iterations (between 2019/20–2021/22) of my 'Digital Game Design' course.

The teaching discussed here was linked to a particular one-year master's degree in digital media focusing on media production without any specific pre-requisites, epistemologically aligned with media and cultural studies and research-creation, critical-practice orientation (see Westecott 2020). In all iterations of the degree discussed here, cohorts were mid-sized (40–50 students), with most (around 90%) international students self-identifying as East Asians, a vast majority of them (>90%) Chinese. During the time investigated here, all students signed up for the 'Digital Game Design' course due to the lack of other options. In this 10-week course, students had a mix of theory-led sessions, gameplay activities and game design and making practice (total of 30 h), supported by facultative out-of-the-class technical workshops on Unity that happened throughout the year (total of 40 h). As an assignment, students could decide to work individually or in groups of up to 4 members and were asked to produce a game that responded to a particular line of inquiry, as well as a 3500-word essay. After the first iteration of the module,

students were also asked to produce a development journal, and the essay was reduced to 2000 words.

This project is a case study grounded on interviewing former students who did this course between 2020 and 2022. With the absence of a system to track and maintain contact with former students, I adopted a snowball strategy, recruiting and interviewing 7 female students from Asia between May–July/2023; none with current ties to my university (see Table 1):

Interviews lasted between 45 and 70 min, and during these, I asked students about topics such as their affective history with games, their expectations and takeaways from the course, and about any relationship between the course and their current professional roles. Besides interviews, I also resorted to my own experiences teaching this course, following the reflective-practitioner tradition (Schön 1991). I analysed interviews through a reflective thematic analysis (Braun and Clarke 2019) approach, recognising my own positionality as someone deeply involved in the phenomenon discussed here rather than focusing on reliability.

On not becoming functionaries: game design beyond mechanistic, algorithmic knowledge

As mentioned in previous sections of this paper, the ambiguity around the term 'game design' can transform it into what Fernández-Vara (2019) names as a 'buzzword', or an 'empty vessel': while different actors might be using the same term, they might be referring to different practices and knowledges. This ambiguity, however, can be increased when we consider local contexts and conditions. Besides the different terminology – evidenced, for example, by the term 'planner', as discussed in previous sections – during my interviews with former students, it became clearer that the shaping of local academic contexts also played a role in expectations. Participant E details her curiosity (and anxiety) over what she would get from this course:

> in China most game-related degrees [accept] only those who can paint, or those who can code. This degree, however, did not ask for a background in coding or in illustration, so I was quite curious […], 'What can this [digital media] degree offer me?', I thought. Is it possible for me to join this degree, join this game design course, and go from someone that don't know anything to someone who can make a game?

Participant E articulates the relationship between her desire to become someone capable of making games and the anxiety over her (perceived) lack of relevant skills according to the model for games education she had encountered in China, one that

Table 1. Summary of students interviewed.

Pseudonym	Year	Role (when interviewed)	Nationality	Previous degree at
A	2020/21	PhD applicant	China	China
B	2020/21	VFX artist	China	China/USA
C	2019/20	Entrepreneur	China	UK
D	2021/22	PhD candidate	China	Hong Kong
E	2019/20	Gamesworker	China	China
F	2019/20	Digital media artist	South-East Asia[11]	UK
G	2021/22	Tech company worker	China	China

sees specific technical abilities as an essential precondition for engaging with games. This observation can help to explain why the students in my opening anecdote were frustrated with the time (in their view) wasted on game 'planning', since these are knowledges that can be considered irrelevant or, at least, less important than others – e.g. manipulating shaders. Games education, in this sense, becomes nothing more than a 'means for learning specific software tools they think are needed to get a job' (Zagal and Bruckman 2008, np), as found in different contexts. However, such a position, favouring technical skills over other elements, can also be linked to the historical constitution of the professional field within China, until recently heavily influenced by the emphasis on technical roles in the context of AAA games' global chains of outsourcing (see Chia 2022; Bulut 2020).

While considering this specific reality is important to understand students' positionalities and expectations, it should not be used to subscribe to the 'student-as-consumer' model of education, as if our – game educators – main purpose was to uncritically satisfy student interests and self-perceived 'needs', without any kind of reflection. On the contrary, our role, as discussed earlier, includes acknowledging and recognising all actors' realities (Freire 2000), but it also entails recognising our role as transformative intellectual agents, with responsibilities in shaping the future of – in this context – games (Freire 2005; Malazita, Rouse, and Smith 2024).

During interviews, participants did not only detail their expectations in relation to game-making possibilities the course would open to them in relation to particular knowledge but also in relation to the kind of educational experiences they would have. Participant B, a student who was interested in what she described as *niche* games, such as Japanese visual novels, expected that the classes would comprise

> an explanation of how different games have different design methods, like a 2D platformer, and how to make them 'good', something like that.

Participant B expectations hint at a somewhat prescriptive course, one that would offer particular approaches to specific genres, including gatekeeping – i.e. defining what is and what is not good (Consalvo and Paul 2019), what should be studied and what should not. Throughout my practice – as experienced by other educators working in similar contexts (e.g. Phelps and Consalvo 2020) – it was not uncommon to encounter students whose expectations were similar to that described by participant B: a list of 'how tos', a roadmap to design 'compelling' games that could neatly be placed in well-defined boxes (i.e. genres). This view, one that is grounded on the popular imaginary that making games is a straightforward process – one that can be 'revealed' to students – is often exploited in HE education contexts, as highlighted by Keogh and Hardwick (2023, 9) in their study of the Australian games HE.

However, as described by Phelps and Consalvo (2020), design is inherently messy and cannot be neatly reduced to simple step-by-step guides. One of the key tenets of design is the fostering of a particular stance, one that is sensitive and responsive to contexts, rather than providing what authors such as Cruz (2021) dub as 'algorithmic' knowledge, a series of 'answers' ready to be recruited and implemented in particular scenarios. Such 'algorithmic' approach, I argue, can lead to educational practices akin to Freire's (2000) banking model of education – in which students simply 'absorb' answers to later reproduce them uncritically. Transposing these ideas to Flusser's (2000) theories, this kind of

algorithmic approach can only generate functionaries, ensnared in the apparatuses and producing nothing more than a permutation of different symbols pre-programmed in these apparatuses, incapable of engaging with the world critically and politically (Mota e Silva 2022). In this case, the apparatuses in game design and making are not only limited to the tools employed in game production – e.g. game engines – but also related to the broader systemic conditions around modes of production and circulation of games around the world, including aspects related to labour and sociomaterial conditions, aspects that are often left aside games education, as criticised by other authors (Ashton 2010; Rouse and Malazita 2023). So how to avoid this 'algorithmic' approach?

In this case, this included unsettling the idea that there are well-defined, determined paths into game-making, including challenging the idea that game-makers have skills beforehand, or that there are certain 'right' ways of making games. This process of rejecting an algorithmic approach did not mean a negation of the importance of technical skills in making games, but that these skills could be developed in tandem with broader competences for engaging with games and needed to be developed at a deeper level, not as rote learning (i.e. as memorising algorithms and commands) but as ways of thinking through tools and systems, avoiding to become a functionary (Flusser 2000).

In the context of this course, this meant promoting a broader view on videogames, challenging and expanding students' repertoires, unsettling commonsensical ideas about games – e.g. that games depend necessarily on high-end graphics; that games are necessarily 'fun'; that 'interactivity' and 'immersion' are markers of a game's quality (as criticised respectively by Fizek 2022; Keogh 2014) – through the introduction of broader examples in a playlist that pushed the boundaries of what games are about. It included similarly to other authors (Keogh 2019; Zagal 2012) presenting games that were produced using tools that are seen as 'not professional' (Keogh 2022) and 'not interactive enough' – such as Nanopesos (Gormaz 2019), games that are 'unfair' – such as QWOP (Foddy 2008) and acknowledging that games can come in multiple shapes, sizes and finalities (de Paula and Carr 2022).

This process was coupled with multiple opportunities in which students were asked not just to practice their technical skills but also to reflect on the contingent and ephemeral nature of tools and methods for game development and was invited to reflect on the sociomaterial conditions for game production and circulation across the globe. In a session about playtest and feedback, students took turns interviewing and being interviewed about their game prototypes to later write reflections about these differences – and the usual limitations of traditional strategies of abstracting feedback into personas and profiles – and such activity made them think about the differences on models that promote an oversimplifying view of players and an all-powerful designer, capable of orchestrating experiences and emotions (de Paula and Carr 2022). When working with game engines, in one of the sessions students were asked to update a pre-made prototype initially developed in an older version of Unity. In that activity, they noticed how, across versions of the same software, libraries stopped working, new functionalities were introduced and how simply memorising lines of code and specific techniques might not be enough: rather, it became clearer how learning to think through game engines is essential to becoming a critically informed game-maker that engages with the world, instead of a functionary of game engines, lost in its programmes (Flusser 2000). A similar process happened throughout a session on the histories of game

production, highlighting the relationship between localities, so-called player preferences and how certain hierarchies of knowledges were constructed throughout time in games – e.g. games as first and foremost a technology-oriented endeavour (Keogh 2023).

These strategies, I argue, were useful to unsettle specific hierarchies of knowledges – e.g. that technical knowledges are always more important in game-making contexts – but they might be of limited relevance if they do not fulfil their purpose. In the case discussed here, in which students often were interested in this course for offering the possibility of making games without necessarily demanding certain pre-requisites (as described by participant F), did it work? What exactly did students get from it?

Finding ways of thinking through game design practice

> Before, I really thought that I was not going to be part of the class because I feel like whatever I played is too niche. I had that impression that that I'm not in the mainstream so not the main audience for this course.
> I loved [the game design course]! […] If you were doing the 'how to make each type of game' approach, I'm sure whatever I was interested in would not be into that landscape because it's something very specific that maybe nobody knows. So, I was very happy, because I got what I needed to design the types of games I'm interested in. […] it's more like a general map to interpret games rather than specifics on how to design games.

The passages above are part of participant B's interview. Among the former students interviewed, participant B was the one who had the most peculiar gaming experience, having played MMORPGs while growing up in China before moving into – in her own words – niche Japanese visual novels during university years. Combining these passages with the one presented in the previous section – where she details what she expected from the course, an introduction to specific games well-situated in specific genres and 'best practices' guidelines – it becomes clearer why she assumed she would not be the focus of this course. In her view, as discussed above, the approach adopted here, one that rejected an 'algorithmic' approach, with well-defined rules and guidelines (Cruz 2021; Phelps and Consalvo 2020), made her feel included, allowing her to understand games in different ways. The map metaphor, allowing her to interpret and navigate games as different landscapes, is useful here since it resonates with the rejection of the role of a functionary. Rather than necessarily being limited by existing programmes – here understood in the Flusserian sense as codes as norms (Flusser 2000) – participant B highlights a degree of autonomy in engaging with and making games.

In a similar vein, participant F indicated in her interview her opinion on the game design course:

> The game course was an excellent, in my point of view, introductory course into game design from the start. I knew the writing narrative part, but I was also introduced to other parts, the mechanics part, the building [making] part. And this that really got me hooked on the degree, because it showed me the world.

A common issue discussed elsewhere in relation to games education is how the assumptions about previous knowledge of games can gatekeep who ends up taking up such educational opportunities (Ashton 2010; Zagal and Bruckman 2008), including how a genre-specific, 'how to' approach to making games can end up alienating students. Considering that, among interviewees, participant F was the one who was least

experienced with games – having only started to play more consistently a year before enrolling in the degree discussed here – and her reflection on her opinion after the course, the two cases, examples discussed here, participants B and F, indicate how a more open approach, one that is grounded on cases and examples, but less prescriptive, can afford a more encompassing and inclusive experience, unsettling commonsensical ideas that only gamers[9] can make games.

These reflections, however, still leave a few questions to be answered: did this only work for students who 'at the margins' of mainstream game cultures? How, exactly, do they see themselves in relation to game design and game-making? Has the approach discussed here unsettled hierarchies of knowledges in games, as proposed?

While all participants interviewed here had different gaming trajectories, even those who were used to and interested in Western AAA games, such as D and E, considered the approach fruitful due to the sense of progress and autonomy that it afforded. This autonomy depended on a dual engagement with games, combining playing – including playing a broader range of games, as discussed before – and experimenting with game engines. Such an approach, I argue, helped students to develop a 'maker mentality', the sensitivity to contexts described as one of the main skills that a designer must have (Cruz 2021; Keogh 2019), and learning to find their own way through games and game-making, as in the metaphor offered by participant B.

In this process of finding one's own way through games, practice plays an important role. It is through practice that it is possible to unsettle the popular imaginary that sees game design and game-making as a straightforward process that will be 'revealed' to (Keogh and Hardwick 2023) or 'deposited' (Freire 2000) into students. Part of this process depended on, following Keogh (2022), understanding the iterative process of game-making as a craft, one that demands not only understanding the apparatus but also working with and through it, something participant E reflects on in her interview:

> When I was making this game in Unity, I could add my own animations to my 2D characters, and paint all the game objects in the scene, and develop the controller for that character. This feeling was really strange and very good for me […] Maybe that's something I experienced that was different from other students, because I think if you are using assets from the Asset Store[10] that won't be as fun.

With this passage, I do not want to reinforce the traditional 'human vs machine' rhetoric that highlights the technical prowess of game-makers, or that games made with custom-made assets are necessarily better, as it became popular through the concept of 'asset flip' (Nicoll and Keogh 2019). Here, what is important is how participant E identifies the easiness promoted by the asset library as one of the Flusserian 'programmes' (2000) offered by Unity. The Asset Store, in that sense, works as another element in the already mentioned space of almost infinite possibilities offered by Unity (Keogh 2022), one that can entrap users into becoming functionaries (Flusser 2000). The response presented here is, then, approaching the game-making process as an iterative craft, using the tool according to her own interests and goals, rather than simply following what the engine 'invites' one to do.

In this context, the role of practice in rejecting an algorithmic approach to game design and making was also important since it ended up highlighting its non-linearity. Rather than depending on a preliminary accumulation of skills and knowledges – as traditionally

expected, say, in traditional educational settings, with well-defined moments of input (classes) and output (tests) – developing such competences depends on understanding the messiness implicated in game design and making, and that is through practice that these knowledges will be refined and developed, as discussed by Keogh (2019; 2022). This is a process that was captured in some interviews, as detailed by participant E

> I think the most important thing during the learning of a digital game design is that it was the first time I was forced to make things, to learn coding, and to use Unity […]. If there was not a course that I have to hand in something, I will never try, because I'm not confident enough making stuff. Although not spontaneously I did it, I finally made something. It was very shitty, but I made it so. I think it's a process of gaining self-confidence that you can do this. It's not just hard as you imagine. Well, if you want to do some very professional work, it's still hard, but it's not hard to start with. I think self-confidence is the most important thing to summarize my whole experience here.

These processes, as described by participant D, are often slow and incremental

> I knew my purpose, what I wanted from this course, and I practiced my skills, my mindset, and developed step by step. Although sometimes that progress was quite slow, because I needed to learn from the very beginning, I made progress and that made me satisfied.

> The most memorable moment in the whole course […] for me was seeing that the game we've developed works. I was so proud of actually seeing our work […] I think that is a moment that I will remember for my whole life.

The process of making one's own games, demystifying (rather than revealing) game-making, plays an important role in understanding game-making as a craft. Rather than seeing it as a necessarily technical endeavour, or one that is dependent on specific, clear and unambiguous guidelines, interviewees often indicated how the experience they had was relevant in understanding game design and making through different lenses. This included here presenting a broader view of games – including design and making – and learning how to move across different contexts, including how certain knowledges could be transferred into different adjacent areas. Reflecting on her experience with this course, and comparing her previous relationship with games as a non-player to her current practice as an international digital media artist, participant F argues that

> It's like knowing there's an ocean out there and not wanting to go versus like 'Oh, I've actually like toward all the islands in this ocean'. And I know this further out at sea. But like, I'm happy knowing how to be on that ocean.

While participant F acknowledges the limits of her knowledge in relation to game design and making – 'I know *this* further out at sea' – her conclusion indicates how her experiences making games throughout the course led her to a more confident mindset in exploring and engaging with videogames. This attitude, I argue, is the one we should expect from a game designer and maker, one that rejects being a functionary of apparatuses, capable of charting their own paths within the vast ocean of games.

Final thoughts: cultural workers and game design as a contextual practice

In his study of game production practices, Keogh (2023) argues that understanding game-makers as cultural workers – akin to other (precarious) workers in contemporary creative

industries – is a better model than considering them tech workers. Game-makers are cultural workers not just because of the conditions they often find themselves in but because the output of their work is, despite our tendency to see games mainly as commodities, cultural. Throughout this paper, I argued that we game educators are also cultural workers – if not in the exact same way as described by Keogh (2023), in the way Freire (2005) discusses *teacherly* work: we are, after all, cultural mediators, helping other actors to make sense, engage with and further develop this professional field. As discussed by Malazita and colleagues (2024), the kind of work we – game educators – do and the choices we make shape the future of the field; so, if change is needed, we must be part of that change.

In this paper, I also argued that educational processes which acknowledge different realities, expand repertoires and possibilities, and challenge existing hierarchies of knowledges can shift perspectives and, paraphrasing Malazita and colleagues (2024), build different – as in more critical and diverse – foundations for those who will be working in/with games in the future. In the game education experience discussed here, such an approach was centred on Flusser's (2000) work on the philosophy of technology, i.e. rejecting simple, direct, 'algorithmic' approaches to creative practices (Cruz 2021; Phelps and Consalvo 2020) beyond transforming makers/users into functionaries. Through this approach – one that is less dependent on instructional 'software teaching' and grounded on students' thinking through tools and processes, aiming at autonomy – students can then become cultural workers and find their own trajectories in the field of games (and, more broadly, media) production.

The study I presented here is not without its limitations, such as its context-specific nature, given that the educational experience explored here happened to a degree reasonably protected from the pressures of vocational-oriented HE. Moreover, while participants offered a rich set of experiences, I did not have the opportunity, for example, of interviewing the two students mentioned in the opening anecdote, which would have offered an interesting reflection on my arguments: have their views changed? Do they recognise the value of those educational experiences now? Future work can focus on how this approach could fare in degrees with different orientations, and how other students with different aspirational profiles make sense of this educational experience.

While there is much space for future research in this field, I argue that the rejection of an 'algorithmic' approach is relevant because, as discussed throughout this paper, game design and making is a context-sensitive practice: its remit, ways of organising and dividing work and even terms change from context to context, as illustrated by the duo *game planner – game designer*. While games are often touted as a global medium, global in this case should not mean universal, since a particular knowledge that might be fundamental in a particular context might not be relevant in a different one. More than having an understanding aligned to a supposed 'universal' model of game design, often one grounded on specific workflows and frameworks, I argue that knowing how to navigate different contexts – and learning how to engage with and think through different tools and processes – is fundamental for understanding game design as a craft, and game workers, and game educators, as cultural workers. Such argument becomes more relevant if we consider this process under the light of local knowledges and practices, even from a 'functionalist' point of view: considering the case discussed here, while the historical landscape of available jobs in game production in China might have shaped some of my

students' imaginaries around game design (e.g. as mainly a technical endeavour), the different possibilities for the future, represented by the rise of interest in locally created AAA games (Chan 2022; Kong 2024), or a turn towards smaller-scale 'indie' game development grounded on entrepreneurship (Huang 2024), both demanding different types of skillsets and professional profiles, indicate how a broader formation that lends itself for imagining and developing different futures might be more fruitful in the longer term.

Notes

1. A game engine is a software development tool that facilitates the production of videogames and other real-time interactive content, such as 3D visualisations, by offering a set of functionalities in, for example, rendering and physics (Foxman 2019; Nicoll and Keogh 2019). Some of the most popular game engines in mid-2020s are Unreal and Unity.
2. *Game planner*, as I discuss later, is not a term commonly used in most professional contexts around the world. The activities the student was referring to (e.g. creating rules, characters and storylines) usually fall onto the remit of a *game designer* in most contexts.
3. Hence, my preference to describe this as a 'game design and making' course.
4. A notable exception here is Wu (2023), who – also grounded on critical pedagogies – reflects on her experience as a Taiwanese woman teaching game criticism in an interdisciplinary/production-oriented degree in the USA.
5. Both terms 游戏策划 and 游戏设计 are usually translated into 'game design' in English. The former usually covers rules, mechanics, economies and balancing (with its literal translation meaning 'game planning'), and the latter also including visual and character design (besides everything included in the previous term). The preferred term for 'game development' is 游戏开发.
6. 'AAA' is a term to refer to high-end, big budget games, akin to 'blockbuster' in the film industry.
7. The label 'indie' (independent), in games context, usually refers to studios that do not have a fixed support from a publisher (see, e.g, Pérez-Latorre 2016). That is not the only way this term has been employed, and discussing the term definitely goes beyond the scope of this paper.
8. 'A combination game with clear and distinct elements' (Flusser 2000, 84). It includes, but is not limited to, computer programmes/algorithms.
9. Employed here in the 'political' sense, as extensively discussed in game studies (e.g. Shaw 2013).
10. Game engines such as Unity often offer an 'Asset Store', a virtual space where users can buy or download for free different components, produced and shared or sold by other users, to later use in their projects, from 3D models and 2D graphic assets to game templates and tools that support specific functionalities (e.g. in input/controllers, physics simulation, rendering, etc.).
11. Since the student was the only one in this cohort from this particular nationality, I refrained from detailing this information.

Acknowledgements

Thanks to all the students who sat in my classes, especially those who participated in this research. Thanks also to Linjie Su for helping with Mandarin translations for the term game design as well as its broader context as a professional practice in China.

Notes on Contributors

Bruno de Paula is a lecturer at IOE, Faculty of Education and Society, University College London (UCL), United Kingdom. He has researched the intersections between video game cultures, game

literacies, identities and game-making by non-mainstream groups. His current research agenda focuses on the history of games and decoloniality (with special attention to video game cultures in the Global South) and on the intercultural (dis)encounters in videogame education within the internationalised Western higher education.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Ethics statement

This project has been evaluated and approved by my institution's Research Ethics Committee (REC1797). Informed consent was sought from all participants, following my institution's and the British Educational Research Association's (BERA) guidelines.

References

Ashton, Daniel. 2009. "Thinking with Games: Exploring Digital Gaming Imaginaries and Values in Higher Education." *Journal of Media Practice* 10 (1): 57–68. https://doi.org/10.1386/jmpr.10.1.57_1

Ashton, Daniel. 2010. "Player, Student, Designer: Games Design Students and Changing Relationships With Games." *Games and Culture* 5 (3): 256–277. https://doi.org/10.1177/1555412009359766

Bettochi, Eliane, Carlos Klimick, and Letícia Perani. 2020. "Can the Subaltern Game Design? An Exploratory Study About Creating a Decolonial Ludology Framework Through Ludonarratives." Proceedings of DiGRA 2020, Tampere. http://www.digra.org/wp-content/uploads/digital-library/DiGRA_2020_paper_376.pdf.

Braun, Virginia, and Victoria Clarke. 2019. "Reflecting on Reflexive Thematic Analysis." *Qualitative Research in Sport, Exercise and Health* 11 (4): 589–597. https://doi.org/10.1080/2159676X.2019.1628806

Bulut, Ergin. 2020. *A Precarious Game: The Illusion of Dream Jobs in the Video Game Industry*. Ithaca: Cornell University Press.

Chan, Khee Hoon. 2022. 'The Rise of Prestige Chinese Games'. *Polygon*. https://www.polygon.com/22893265/china-aaa-indie-video-games-genshin-impact-dyson-sphere-program.

Chia, Aleena. 2019. "The Moral Calculus of Vocational Passion in Digital Gaming." *Television & New Media* 20 (8): 767–777. https://doi.org/10.1177/1527476419851079

Chia, Aleena. 2022. "The Artist and the Automaton in Digital Game Production." *Convergence: The International Journal of Research Into New Media Technologies* 28 (2): 389–412. https://doi.org/10.1177/13548565221076434

Consalvo, Mia, and Christopher A Paul. 2019. *Real Games: What's Legitimate and What's Not in Contemporary Videogames*. Cambridge, MA: MIT Press.

Cruz, Cristiano Codeiro. 2021. "Decolonizing Philosophy of Technology: Learning from Bottom-Up and Top-Down Approaches to Decolonial Technical Design." *Philosophy & Technology* 34 (4): 1847–1881. https://doi.org/10.1007/s13347-021-00489-w.

de Paula, Bruno, and Diane Carr. 2022. "Platforms and Texts, Rules and Play: Teaching Game Design and Game Analysis." Proceedings of game analysis perspectives conference, Copenhagen, 12–15. https://blogit.itu.dk/msgproject/wp-content/uploads/sites/35/2022/04/conference-proceedings.pdf#page=12.

Fernández-Vara, Clara. 2019. *Introduction to Game Analysis*. New York: Routledge.

Fizek, Sonia. 2022. *Playing at a Distance: Borderlands of Video Game Aesthetic*. Cambridge: MIT Press.

Flusser, Vilém. 2000. *Towards a Philosophy of Photography*. London: Reaktion Books.

Foddy, Bennett. 2008. 'QWOP'. http://www.foddy.net/Athletics.html.

Foxman, Maxwell. 2019. "United We Stand: Platforms, Tools and Innovation With the Unity Game Engine." *Social Media + Society* 5 (4): 2056305119880177. doi:10.1177/2056305119880177

Freire, Paulo. 2000. *Pedagogy of the Oppressed*. New York: Continuum.

Freire, Paulo. 2005. *Teachers As Cultural Workers: Letters to Those Who Dare Teach*. 1st edition. Boulder (Colo.): Westview Press.

Geyser, Hanli. 2018. "Decolonising the Games Curriculum: Interventions in an Introductory Game Design Course." *Open Library of Humanities* 4 (1): 1–31. https://doi.org/10.16995/olh.217.

Gong, Huiwen, and Xiaorui Xin. 2019. "Buzz and Tranquility, What Matters for Creativity? A Case Study of the Online Games Industry in Shanghai." *Geoforum; Journal of Physical, Human, and Regional Geosciences* 106 (November): 105–114. https://doi.org/10.1016/j.geoforum.2019.08.002.

Gormaz, Camila. 2019. 'Nanopesos'. https://laburatory.itch.io/nanopesos.

Gu, Xin, and Justin O'Connor. 2019. "Teaching 'Tacit Knowledge' in Cultural and Creative Industries to International Students." *Arts and Humanities in Higher Education* 18 (2–3): 140–158. https://doi.org/10.1177/1474022218824554

Harvey, Alison. 2020. "Freedom from the Industry Standard: Student Working Imaginaries and Independence in Games Higher Education." In *Independent Videogames: Cultures, Networks, Techniques and Politics*, edited by Paolo Ruffino, 253–267. Routledge.

Huang, Gejun. 2024. "Exploring Cultural Policy and Gaming Entrepreneurship in Shanghai: An Entrepreneurial Ecosystem Perspective." In *The Chinese Video Game Industry*, edited by Feng Chen, Ken S. McAllister, and Judd Ethan Ruggill, 77–95. Cham: Springer International Publishing. https://doi.org/E10.1007978-3-031-41504-3_5

Ingleby, Ewan. 2015. "The House That Jack Built: Neoliberalism, Teaching in Higher Education and the Moral Objections." *Teaching in Higher Education* 20 (5): 518–529. https://doi.org/10.1080/13562517.2015.1036729

Keogh, Brendan. 2014. "Across Worlds and Bodies: Criticism in the Age of Video Games." *Journal of Games Criticism* 1 (1): 1–26.

Keogh, Brendan. 2019. "Are Games Art School? How to Teach Game Development When There Are No Jobs." Presented at the GDC 2019, San Francisco. https://brkeogh.com/2019/06/22/are-games-art-school-how-to-teach-game-development-when-there-are-no-jobs/.

Keogh, Brendan. 2022. "Situating the Videogame Maker's Agency Through Craft." *Convergence: The International Journal of Research Into New Media Technologies* 28 (2): 374–388. https://doi.org/10.1177/13548565211056123

Keogh, Brendan. 2023. *The Videogame Industry Does Not Exist: Why We Should Think Beyond Commercial Game Production*. Cambridge: The MIT Press. https://doi.org/10.7551/mitpress/14513.001.0001.

Keogh, Brendan, and Taylor Hardwick. 2023. "Creative, Technical, Entrepreneurial: Formative Tensions in Game Development Higher Education." *Games and Culture* May: 15554120231176874. https://doi.org/10.1177/15554120231176874

Kong, Degang. 2024. "Internationalization and Post-Orientalism: The Evolution of the Guochao of Contemporary Chinese Video Games." In *The Chinese Video Game Industry*, edited by Feng Chen, Ken S. McAllister, and Judd Ethan Ruggill, 61–74. Cham: Springer International Publishing. https://doi.org/10.1007/978-3-031-41504-3_4

Lankoski, Petri, and Jussi Holopainen. 2017. *Game Design Research: An Introduction to Theory and Practice*. Pittsburgh: ETC Press.

Larsen, Lasse Juel. 2018. "Juicing the Game Design Process: Towards a Content Centric Framework for Understanding and Teaching Game Design in Higher Education." *Educational Media International* 55 (3): 231–254. https://doi.org/10.1080/09523987.2018.1512445

Malazita, James, Rebecca Rouse, and Gillian Smith. 2024. "Disciplining Games." *Game Studies* 24 (1). https://gamestudies.org/2401/articles/malazita_rouse_smith.

Mota e Silva, Tiago. 2022. "The (a)Political Dimension of School: Vilém Flusser's Project with No Purpose for Education." *Flusser Studies* 34. https://flusserstudies.net/sites/www.flusserstudies.net/files/media/attachments/mota-the-political-dimension-the-school.pdf.

Nakamura, Akinori, and Hanna Wirman. 2021. "The Development of Greater China's Games Industry : From Copying to Imitation to Innovation." In *Game Production Studies*, edited by Olli Sotamaa, and Jaroslav Švelch, 275–292. Amsterdam: Amsterdam University Press.

Nicoll, Benjamin, and Brendan Keogh. 2019. *The Unity Game Engine and the Circuits of Cultural Software*. Cham: Palgrave Pilot.

Penix-Tadsen, Phillip. 2019. *Video Games and the Global South*. Pittsburgh, PA: ETC Press.

Pérez-Latorre, Óliver. 2016. "Indie or Mainstream? Tensions and Nuances Between the Alternative and the Mainstream in Indie Games." *Anàlisi* 0 (54): 15–30. https://doi.org/10.7238/a.v0i54.2818

Pérez-Latorre, Óliver, and Víctor Navarro-Remesal. 2021. "Euro Ludens: On the Origins, Playing Region, and Imaginaries of the European Videogame." In *Perspectives on the European Videogame*, edited by Víctor Navarro-Remesal, and Óliver Pérez-Latorre, 15–36. Games and Play: Amsterdam University Press. https://doi.org/10.1017/9789048550623.002

Phelps, Andrew, and Mia Consalvo. 2020. "Teaching Students How to Make Games for Research-Creation/Meaningful Impact: (is Hard)." Proceedings of the 15th international conference on the foundations of digital games, 1–7. FDG '20. New York, NY, USA: Association for Computing Machinery. https://doi.org/10.1145/3402942.3402990

Rouse, Rebecca, and James Malazita. 2023. "Critical Disciplinary Thinking and Curricular Design in Games." *Design Issues* 39 (1): 88–104. https://doi.org/10.1162/desi_a_00708.

Schön, Donald. 1991. *The Reflective Practitioner: How Professionals Think in Action*. Aldershot: Ashgate.

Shaw, Adrienne. 2013. "On Not Becoming Gamers: Moving Beyond the Constructed Audience." *ADA: Journal of Gender New Media & Technology* 2. https://doi.org/10.7264/N33N21B3.

Sicart, Miguel. 2023. *Playing Software: Homo Ludens in Computational Culture*. Cambridge, Massachusetts: The MIT Press.

Stateri, Julia, and Jaderson Souza. 2021. "Propondo Princípios Orientadores à Produção Decolonial de Videogames Diversos." *Revista Contracampo* 40 (3): 1–23. https://doi.org/10.22409/contracampo.v40i3.50212.

Swalwell, Melanie. 2021. "Heterodoxy in Game History: Towards More "Connected Histories"." In *Game History and the Local*, edited by Melanie Swalwell, 221–233. Cham: Palgrave Macmillan.

Thomsen, Michael. 2018. 'The Universe Has Been Outsourced'. *The Outline*. https://theoutline.com/post/3087/outsourcing-blockbuster-video-games-made-in-china-horizon-zero-dawn.

Trammell, Aaron. 2022. "Decolonizing Play." *Critical Studies in Media Communication* 39 (3): 239–246. https://doi.org/10.1080/15295036.2022.2080844

Weiller, Thais Arrias. 2021. "Teaching People What They Already Know. Designing Game Design Courses." *Gamevironments* 5 (December): 380–392. https://doi.org/10.48783/gameviron.v15i15.158.

Westecott, Emma. 2020. "Game Sketching: Exploring Approaches to Research-Creation for Games." *Virtual Creativity* 10 (1): 11–26. https://doi.org/10.1386/vcr_00014_1

Wu, Hong-An (Ann). 2023. "Pedagogical Encounters with Structural Whiteness in Games: Tales and Reflections from a Game Studies Classroom." *Journal of Games Criticism* 5 (Bonus Issue A). https://gamescriticism.org/2023/07/27/pedagogical-encounters-with-structural-whiteness-in-games-tales-and-reflections-from-a-game-studies-classroom/.

Zagal, José P. 2012. "Why a Game Canon for Game Studies Education Is Wrong." In *Computer Games and New Media Cultures: A Handbook of Digital Games Studies*, edited by Johannes Fromme, and Alexander Unger, 665–677. Dordrecht: Springer Netherlands. https://doi.org/10.1007/978-94-007-2777-9_42

Zagal, José P. 2013. "Understanding Japanese Games Education." Proceedings of DiGRA 2013, Atlanta, USA. https://my.eng.utah.edu/~zagal/Papers/Zagal_Understanding_Japanese_Games_Education.pdf.

Zagal, José P., and Amy Bruckman. 2008. "Novices, Gamers, and Scholars: Exploring the Challenges of Teaching About Games." *Game Studies* 8 (2). http://gamestudies.org/0802/articles/zagal_bruckman.