

Education in the open: Building a network for social action

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Abstract

This paper introduces Fast Food da Política (FFDP) as a case study of a learning network designed to promote social action in a developing country. Our focus is on exploring FFDP design elements, such as those related to tools, tasks and social organization, and the connections between these elements and valued learning activity. FFDP cleverly (re)purposes popular (board) games as pedagogical tools, which are then customised for the teaching and learning of the mechanisms and functioning of Brazilian political structures. FFDP has taken their political games to game-playing sessions across the country in varied venues – including schools, government organisations, and open sessions at market-street events and public protests. Their games are shared as open learning resources through blueprints and manuals that explain the many ways a game can be played, and which are easily downloadable through their website. FFDP also encourages game users (educators and learners) to come up with and share their own game-playing ideas for reuse. As a result, FFDP has built a repository of games that is constantly evolving, as new ways of using their open resources are captured and packaged for sharing and reuse by others. As a not-for-profit organisation, FFDP has been successfully relying on social media and crowdsourced funding to survive. In this paper, we draw on the ACAD Wireframe to explore the alignment of this network’s design elements at the micro and meso levels, focusing on the ways FFDP combines a strategic educational vision deeply grounded on action for social change, with a curriculum that emphasizes gaming elements and promotes the physicality of materials in learning. At the micro level, the case study examines how the quality of materials support the development of educational innovation, while at the meso level this organization, driven by young women, is building-up a learning network for social action, empowering children, youth and adults to learn about the mechanisms of politics and their civil rights, within the Brazilian context. Overall, this paper offers an inspiring example of a productive learning network in action, where participation and co-creation are fostered through connections between a network of people, ideas, digital and material elements.

Keywords

Open education; design for learning; games in education

Introduction

Developing countries are often challenged by a lack of investment in the development of public policies and processes, and support for initiatives that expand and democratize people’s access to knowledge and education about these processes. Brazil’s history is marked by regional and socio-economic differences, positioning this developing nation alongside others, which are in deep need of open education initiatives that encourage networked learning (Jimena et al, 2019). One of the main goals of the open movement has been to improve education by facilitating access to educational resources and/or practices and, in so doing, to achieve greater effectiveness and equality in education (Cronin, 2017; Cronin & MacLaren, 2018). Open Educational Practices (OEP) usually refer to practices that include the creation and (re)use of Open Educational Resources (OER) but may also refer to open pedagogies and teaching practices that are freely shared (Cronin & MacLaren, 2018). Such practices also often relate to respect and empowerment of learners, and place learners as co-producers of their own learning trajectories (Ehlers, 2011). In this paper, we analyse Fast Food da Política (FFDP) as a productive learning network (Carvalho & Goodyear, 2014; 2019) using a particular set of analytical lenses – the ACAD framework (Goodyear & Carvalho, 2014) and the ACAD Wireframe (Carvalho & Yeoman, 2019; Yeoman, 2015, 2018) – to explore the ways this network is operating and highlight the importance of alignment

between key design elements. The FFDP case study combines OERs with game-playing, resulting in a network of elements that comes together to educate Brazilians about the mechanisms of their political system and their civil rights. We argue that this learning network strongly enacts the networked learning values of participation, co-creation and knowledge building.

In discussing the case study of FFDP our focus is on illustrating alignment between multiple elements of a learning network including: (1) a strategic educational vision deeply grounded in action for social change, (2) a curriculum that emphasizes gaming elements, (3) the physicality of materials in learning and (4) ways of connecting people through both digital and physical resources. At the micro level we will ask you to pause and consider how the quality of materials supports the development of educational innovation, whilst at the meso level we will invite you to reflect on how an organization run by a group of young women is becoming an established learning network for social action in Brazil. Their goal is to empower children, youth and adults to learn about the mechanisms and functioning of Brazilian politics and, in so doing, to encourage social action based on civil rights. This case study illustrates coherence and consonance working in tandem, as the physical and online spaces come together to encourage, support and showcase a powerful strategic vision, enacted in both formal and informal educational settings. A networked learning spirit is embraced through workshop facilitation and community events where the FFDP methodology and vision are disseminated, and new ideas are gathered, before being curated and shared with participants. Co-creation and participation are some of the principles at the core of this network. As a not-for-profit organization FFDP relies on crowdsourced funding to survive, as it provides free access to all game blueprints and manuals that explain the different ways each game can be played. These OERs are downloadable through their website, and include cost-effective suggestions about how to adapt different elements to create games that are grounded in the socio-economic reality of Brazil. Their pool of OERs is always evolving as new ways of playing games are captured and repackaged for sharing with others in their ever-growing community of learners (Wenger et al, 2002).

In the next section we contextualise our approach to networked learning, briefly introducing the ACAD framework and ACAD Wireframe. We then summarise issues associated with the use of games in education, before presenting and discussing the FFDP as our case study of a learning network. We conclude our paper with the implications of this work, for analysis and design of productive learning networks, before setting out how these ideas are informing our research into the future.

Framing designable structures at macro, meso and micro Levels

According to Dohn (2018), the notion of “networks” can be associated with multiple meanings. It may sometimes refer to geographically distributed people, who come together via an infrastructure of interconnected technologies. Or it can be used to describe communication that is mediated by the use of the internet. It may be about networked machines as agents, or instead, about life activities happening in spaces that mix the physical and the virtual. Networks can also describe people’s dependence on others for their daily activities, such as, when one refers to a personal network of family, friends, and like-minded others. There are many perspectives one can take, and they all foreground connections.

Goodyear and Carvalho (2014) explain that networked learning is often process-oriented and connected to a philosophical and pedagogical perspective on learning. Their use of the term learning networks is about describing inquiry in educational research, and phenomena that is often object-oriented. As such, the Activity Centred Analysis and Design (ACAD) framework (Goodyear & Carvalho, 2014) offers analytical lenses to explore how the structural elements in a learning network come to influence emergent activity. ACAD identifies three “designable” components of learning networks and a fourth that is characterised as “emergent”. Designable components include those in (i) set design – or the digital and physical structures, tools and resources made available at learnertime; (ii) social design – referring to social arrangements of learners, roles and divisions of labour, and (iii) epistemic design – or the proposed tasks, including knowledge and ways of knowing. The last structural component in the ACAD framework is emergent and characterised as co-configuration activity, which includes learners re-configuring and co-creating what has been proposed at learnertime. Drawing on the ACAD framework (Goodyear & Carvalho, 2014), alongside Goodyear’s (1999) earlier notions of pedagogical frameworks and the concept of pattern languages (Alexander et al., 1977), the ACAD Wireframe (Carvalho & Yeoman, 2019; Yeoman, 2015; 2018) offers a grid to sketch representations of ACAD’s three designable elements, at different levels of granularity: micro, meso and macro levels (Table 1).

The ACAD Wireframe has been used to address some of the practical challenges in educational design. Some of these challenges can be associated with designers reaching a shared epistemology of learning before starting work on a new design (Yeoman & Carvalho, 2019), others relate to analysis that traces the coherence across

dimensions of design (left to right) and scale levels (top to bottom) (Carvalho & Yeoman, 2019, Yeoman, 2015, 2018). In this paper, we use the ACAD Wireframe to analyse the coherence of the designable components of the meso and micro levels of this particular learning network. However, before doing so, we discuss relevant research in games in education as this is a crucial component of the epistemic design of the FFDP network.

Table 1. The ACAD Wireframe

<i>Philosophy</i>	SET DESIGN <i>Learning is...</i>	EPISTEMIC DESIGN <i>Learning is...</i>	SOCIAL DESIGN <i>Learning is...</i>
MACRO <i>The global Level I patterns</i>	<i>Buildings & technology</i>	<i>Stakeholder intentions</i>	<i>Social systems</i>
MESO <i>The local Level II patterns</i>	<i>Allocation/use of space</i>	<i>Curriculum</i>	<i>Community</i>
MICRO <i>The detail Level III patterns</i>	<i>Artifacts, tools & texts</i>	<i>Selection, sequence & pace</i>	<i>Roles & divisions of labour</i>

Games in education

The use of games in educational contexts is not particularly new and can be traced back to the 1960s. With the advent of digital technologies and the internet, video, computer and mobile application games have increased in popularity and have rapidly become part of most people's lives in one form or another. Over 15 years ago, Gee (2003) argued that schools, families, and educational researchers could learn a lot from the principles of good computer and video games. Squire and Jenkins (2004) also highlighted the importance of "fittingness" between games and the overall educational context, including questions surrounding how and why one plays a game, who one is and who they hope to become, and how playing games may allow participation in social practices. Although Gee (2003), and Squire and Jenkins (2004) discussed digital games, we argue that material games offer specific qualities and properties that may contribute to creating educational environments that transform learning into an exciting challenge when infused with game-like elements. What is more, the physicality of games contributes to tool mediated experiences that help to situate people's understanding of the world in interaction that extends beyond brains and bodies – embracing tools, symbols, and artefacts in-use as mediators of our actions in the world (Clark, 2010; Kirsch, 2013). In thinking about the physicality of games, we see connections to Sørensen's (2009) perspective on the materiality of learning, or in practices where the social and material are intrinsically connected to broader ecologies of learning. As Fenwick (2015) reminds us "material things are performative. They act, together with other types of things and forces, to exclude, invite, and regulate particular forms of participation" (p. 85).

As game-players interact with others, either in massive multiplayer games simultaneously online, physically co-located with materials and strangers in a street-market event, or in small groups of known others, people playing these games are taking up the challenge of engaging in collaborative team activity, with the aim of achieving a shared game goal. In these situations, players often bring different but overlapping skills or knowledge, helping each other while sharing their knowledge, skills, and values. In so doing, they co-create knowledge, and have fun with like-minded others in a community of learners (Wenger et al., 2002). Researchers and educators have long been trying to understand how games engage people in lifelong learning. Specific areas of educational research include "serious games", "epistemic games" and "gamification" (Schaffer, 2006; Dicheva et al, 2015). Serious games refers to games developed to teach specific knowledge, content, or curricula. Gamification usually refers to the use of game-like elements in non-game related contexts. In this case study, we argue that regardless of the specifics of the game design, game play fosters engagement in critical thinking, creative problem-solving, and teamwork. In so doing, game-playing encourages players to develop skills and knowledge that may lead to solutions of complex social problems.

FFDP case study

The FFDP case study reported in this paper is part of a larger research project that explores the structural composition of productive learning networks (Carvalho & Yeoman, forthcoming). Case study is a qualitative

research strategy, often used to support in-depth exploration of “a program, an event, an activity, a process, or one or more individuals. The case(s) are bounded by time and activity, and researchers collect detailed information using a variety of data collection procedures over a sustained period of time” (Creswell, 2003, p. 15). For this analysis, we interviewed Julia Carvalho, the founder and one of the creative minds behind this network. We also gathered FFDP artefacts including copies of the games, their online descriptions and manuals, downloads from the FFDP website, reports of public events published in news outlets and disseminated via the FFDP Facebook and Instagram accounts, and YouTube videos reporting on the work of this network.

Background

In 2014, prompted by an assignment, a graphic design student set out to create a game that would teach ordinary people about the complex workings of political structures in Brazil. Like many others, Julia Carvalho was deeply concerned about growing political unrest that was producing an increasingly polarized society. In 2015, she embarked on a trip with the Hacker Bus, taking this as an opportunity to connect with others that were also developing games to help people learn about politics. Overwhelmed by the divisive and often violent nature of the verbal exchanges between members of two political groups, Julia and other hackers wondered if it was possible to encourage public debate in a productive but playful way. FFDP emerged as a project during their trip in the Hacker Bus, and its beginning coincided with the day of a major political protest in front of the National Congress, where many were asking for the presidential impeachment. Julia and her companions in the Hacker Bus questioned whether games and fast dynamics could help people review their positioning, certainties and learn the rules of political processes, or learn about what would be the consequence of a presidential impeachment. Together, during this trip, they conceptualized and designed a new game, using a simple basketball structure, their game invited players to reflect on the structure of the Brazilian government (Figure 1).



Figure 1: Basketball game: Three powers system

At public protests, government supporters tended to wear red, identifying themselves with the labor party, and those calling for presidential impeachment tended to dress in the yellow colour of the Brazilian flag. Even in the polarized scenario of public protests, Julia and the hackers quickly noticed those wearing red and yellow were surprisingly open to conversations. With the help of the games a friendlier scenario was set, where questions could be posed, and a strategic and democratic discussion could unfold, about people’s contradictory views of the impeachment process. It also made evident that both “sides” did not know who would replace the President once impeachment was completed, and so through game playing, people were invited to a deeper reflection on the issue. The use of the basketball game turned out to be really positive, supporting productive exchanges between the two polarized groups.

FFDP – framing the architecture of a learning network

In adopting a networked learning approach to explore FFDP design elements, we return to the ACAD Wireframe, offering a sketch of the key design elements of this learning network (Table 2). Doing so highlights the coherence of the FFDP vision enacted through a political curriculum, their overarching social values, and the learning “spaces” created by the tools and resources which are used and shared in physical gatherings and online – on the FFDP website, on their Facebook and Instagram accounts – as the network organises and repurposes individual elements over time and space.

The ACAD lenses reveal consonance between social, set and epistemic elements at both the micro and meso structural levels – and what we see is a strategic vision (meso level) that is cleverly supported by numerous resources, specific social arrangements and fun game tasks (micro level) to address the social, political and economical situation of a divided country (macro level). At both the micro and meso levels FFDP embraces openness in ways that respect and empowers learners. They support practices that encourage people to participate as co-producers, not only of their own learning trajectories, but of the community as whole, taking hold of their history, political rights and destiny.

Table 2. FFDP: Coherence at micro and meso levels

	SET	SOCIAL	EPISTEMIC
Macro	Brazil	A socially, politically, and economically divided country	An absence of education about politics and the mechanics of elections.
Meso	Public spaces Private spaces Facebook Instagram FFDP Website	A vision for social change that includes representations of “all voices”, people from different social classes, ages, ethnicities, work experiences etc.	A political curriculum: Brazilian government structures and the three powers’ system (legislative, executive and judiciary), government roles and responsibilities, and the make-up and backdrop of pre-election debates including issues of gender representation within politics. A gaming pedagogy.
Micro	Game sets Classrooms Street sidewalk Spaces of political protests Online blueprints & manuals	Groups of teachers Groups of students People passing by at a street event	Game mechanics: e.g. Who’s Who?, jigsaw, basketball, hangman

Micro level

From the beginning, and at the micro level, FDDP games posed questions and invited game-players to consider issues like: What is the presidential line of succession? What role is responsible for what? Which laws current exist and should not, which ones exist and need to be known, or which are not yet part of their civil rights? The FFDP games essentially incite debates that explain mechanisms of the Brazilian political system, and this is one of their most relevant characteristics – games are designed to bring many different people together to play, discuss and learn (micro social design). Building on the ideas of the basketball set described above, other games were created, one of these explores a theme related to government roles and responsibilities (micro epistemic design) while using a jigsaw structure (micro set design) (Figure 2). The rationale being that once all the pieces had been placed, participants would be invited to reflect on the government structure, and gain insights into the different types of responsibilities of certain government roles.



Figure 2: Jigsaw game: Cargos e Cargas

Through the materials (micro set design), FFDP games bring people together, old and young, rich and poor (micro social design). FFDP games are colourful, well-crafted, and strive to incorporate the mechanics of popular games including basketball, hangman, and Guess Who. By relying on people’s familiarity with the rules of these games (micro epistemic design), common ground is quickly established implicitly inviting participation as people approach a game in session. Qualities of the games such as colour, size, and familiarity (micro set design) invite people to come closer, and arranging sessions at public venues or markets broadens participation (micro social design). This coupling of social and material elements (Sørensen, 2009) works to make people feel welcomed and encourages them to have a go. The super-sized version of Guess Who is an excellent example. When people are casually walking the streets, it is difficult to miss the invitation to play (Figure 3) and Julia explains that this particular game is often used as a “calling out” at public events, or a way to attract and engage casual passers by in discussions about politics. The FFDP version of Guess Who is designed to scaffold learning through impromptu dialogue about politicians—their positions and roles in government, party alliances – with people from diverse backgrounds. In addition, the physicality of the gaming elements allows people to take ownership of different pieces, holding and feeling them whilst thinking about where to place an item or what they represent. As such, playing also involves learning through bodily actions that support the negotiation of meaning and the integration of knowledge (Clark, 2010; Kirsh 2013).



Figure 3: A super-sized version of Guess Who: Cara a Cara

FFDP organises gaming sessions in formal and informal educational settings, with sessions run on free market days and other popular public events, including those advertised via social media. They have also run sessions in public primary and secondary schools with students and teachers. Sessions with teachers may include the ideas and methodology that inspired FFDP or “behind the scenes” insight into the development of specific games. As part of these sessions, teachers become developers themselves, and they are invited to think and share new ways of playing an existing game, or to contribute ideas for the development of a new game. FDDP has plans for these new ideas to be (re)packaged and shared with all.

Meso level

Overall, the concept of “fast food” evokes the idea of something easy to consume and with the added element of fun, their name and logo were designed to appeal to Brazilian youth. But at the heart of these ideas, is something far more profound, a commitment to empowering all Brazilians to take hold of both their future and their civil rights (meso epistemic design). Ultimately these games are about understanding the mechanisms of elections, how current political structures work, and the importance of choosing political representatives very carefully. Their overarching aim is to find ways to teach people about political systems and processes through gaming, offering experiences that engage learners in critical thinking while having fun. In many respects, FFDP enacts Paulo Freire’s (1996) ideals of critical pedagogy, where the freedom of all is connected to their ability to deal critically with reality, and to find ways of actively participating in the transformation of their world.

FFDP are fierce champions of inclusion and diversity and this is reflected in the attention they pay to the social organisation of their gatherings – designed to include representatives of “all voices”, voices from different social classes, ages, ethnicities, and work experiences (meso social design). A cards game called Rights and Silence is another example of their preoccupation with themes of inclusion and discrimination. This game invites discussion about women’s civil rights, whilst problematising issues of gender discrimination within the Brazilian historical context. Game players reflect on rights that have been formally acquired, and discover others, which might not have eventuated yet. Whether these highly visible materials are being used as “calling out” or passed around, physical game elements invite people to think and make a stand and this activity, in turn,

often attracts the attention of a broader audience, who is then invited to participate in, widening the circle of the political debate. As people engage in conversations about political systems they reflect on, learn, and share ideas with others. Main themes at the meso epistemic design include a curriculum geared at learning about: (i) structures of the Brazilian government and the three powers' system – legislative, executive and judiciary, (ii) government roles and responsibilities, (iii) the make-up and backdrop of pre-election debates, and (iv) issues of gender representation within politics.

Important principles of this network are also enacted in the digital realm – often used to bring people together via social media and providing access to open resources and platforms for sharing. As such, at the meso set design, FFDP also reaches outwards, reflecting coherence with open resources and platforms for sharing their ideals and games. FFDP capitalises on social media and crowdsourced funding to support their activities and game development, through online initiatives that invite contributors to sponsor the creation of sets, workshops in schools, and announce open events in public spaces. Their online environment is carefully designed to complement physical events, with information and resources to support those interested in “spreading the fun” and enacting their shared vision. Facebook and Instagram groups reach an audience of over 5000 followers. Online resources include free downloadable blueprints of each of the games, including detailed manuals illustrating different ways they can be played (Figure 4). Their ideas and ideals are generously shared as OERs, an act that is positioning FFDP as a leader in innovation and political social action, in the broader Brazilian educational community.



Figure 4: Guess Who (Cara a Cara): Downloadable manual with step-by-step instructions to make your own version of the game

Conclusion and future directions

This paper introduced and discussed FFDP as a case study, which is part of a larger research project that is gathering and examining the structural composition of various productive learning networks in formal and informal educational settings (Carvalho & Yeoman, forthcoming). Understanding the architecture of learning networks involves noticing how a specific assemblage of elements contributes to valuable learning outcomes, with a focus on how key designable elements influence emergent learning activity – it is about foregrounding part-whole relationships at various levels of granularity: micro, meso and macro. The ultimate goal of this educational design work is to identify key designable components for future (re)use, and in so doing, to contribute to improvements in (new) designs for networked learning. The case study of FFDP may be of particular interest for educators in the many developing countries experiencing similar issues as those described in the context of the Brazilian political arena. FFDP showcases a learning network that reflects coherence and consonance in the composition of its structural elements, mixing fun and familiarity, inclusion and openness, to

help people learn and teach deeper critical thinking of political matters, and in so doing, to empower learners to take hold of their own future.

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