

Field Report

Serious hunger games: Increasing awareness about food security in Canada through digital games

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Abstract

Digital games are becoming increasingly common knowledge transfer media. So-called “serious games” or “games for good” have attracted academic, industry, and mainstream attention through the proliferation of conferences, journals, blogs, and online communities. They offer what few other educational resources can in a single medium: interactive, user-led learning experiences based on discovery and experimentation, explorations of complex systems through skill development and decision making, and a personal connection with the content through role-playing (Bogost, 2007; Dahya, 2009; Gee, 2003; Kee & Bachynski, 2009). As digital games move out of the home and into public education, sharing experienced-based insights on how to navigate this new terrain is important and necessary to efficiently create media that is both informative and engaging. This field report reflects on the process of developing the educational game *Food Quest*, from conception to completion, including the challenges, surprises and lessons learned. After detailing the gameplay of *Food Quest*, we provide a chronological report on the design and development process, including origins and exploratory phases of the project, concerns around digital game-based learning, and the unanticipated obstacles that contributed to a lengthy development process. The report also provides preliminary evaluations and recommendations for others interested in create a similar digital resource to spread awareness about food security.

Introduction

Digital games are becoming increasingly common knowledge transfer media. So-called *serious games* or *games for good* have attracted academic, industry, and mainstream attention through a proliferation of conferences, journals, blogs, and online communities. They offer what few other educational resources can in a single medium: interactive, user-led learning experiences based on discovery and experimentation, explorations of complex systems through skill development and decision making, and a personal connection with the content through role-playing (Bogost, 2007; de Castell & Jenson, 2005; Gee, 2003; Kee & Bachynski, 2009). As digital games move out of the home and into public education, sharing experienced-based insights on how to navigate this new terrain is important and necessary to efficiently create media that is both informative and engaging. This field report reflects on the process of developing the educational game, *Food Quest*, from conception to completion—including the challenges, surprises, and lessons learned. It is written from the perspective of two community organizers committed to promoting and increasing awareness of particular social justice issues through digital game design. We believe that understanding the process from this perspective will be valuable to academics considering developing serious games in the context of food education, and as such, storytelling is our primary intention here. First, we briefly contextualize this report within the emerging genre of serious and social justice game design to increase awareness of socio-political issues. We then detail the gameplay of *Food Quest*, followed by a chronological report on the design and development process, including origins and exploratory phases of the project, concerns around digital game-based learning, and the unanticipated obstacles that contributed to a lengthy development process. The report also provides preliminary evaluations and recommendations for others interested in creating a similar digital resource to spread awareness about food security. In particular, we highlight the ongoing challenges pertaining to the perceived educational value of digital games, as well as the legitimacy of game studies as a scholarly field of inquiry.

Increasing awareness with socio-political games

The mechanics of today's socio-political games are more sophisticated than the poorly designed edutainment games of the 1980s or 1990s, where gameplay is decontextualized from learning (Gee, 2003). For example, in the popular 1990s educational games, *Word Rescue* and *Math Rescue*, players jump on enemies and collect coins in a two-dimensional, side-scrolling game world that mimics the gameplay style of the popular Super Mario games from the same era. Players are also required to answer questions that test basic literacy or numeracy skills before they are allowed to progress to the next level. In both *Word Rescue* and *Math Rescue*, the actual gameplay of collecting coins or killing enemies does not assist the player in answering the skill-testing questions, and therefore does not assist in the development of literacy or numeracy skills beyond the usual improvements derived from engaging in non-digitized, rote-learning exercises.

The reverse is also true: correctly answering the questions allows the player to gain access to the next level, but it does not enhance or support the gameplay. Socio-political games, however, are specifically designed to provide a contextualized learning experience, and make use of “persuasive rhetoric”¹ to educate players on a social or political topic, influencing social change through game play (Bogost, 2007; Dahya, 2009). A number of socio-political games have been developed to increase public awareness of serious issues such as war (e.g., *Darfur is Dying*, 2006), poverty in the third world (e.g. *Ayiti: The Cost of Life*, 2006), abuse (e.g., *Replay: Finding Zoe*, 2007), and homelessness (e.g., *Homeless: It's No Game*, 2006).

Over the last decade, a number of researchers and practitioners have brought a participatory angle to serious and socio-political game design (Danielsson & Wiberg, 2006; Khaled & Vasalou, 2014; Lochrie & Coulton, 2011). As a resource collaboratively developed by a hands-on working group comprised of representatives from national and provincial chronic disease and food security organizations, community-based groups as well as academics and government, *Food Quest* was developed according to the principles of iterative,² participatory design. Despite the positive impact of socio-political games in terms of increasing awareness of particular social issues (Games for Change, 2009), it was expected that the *Food Quest* working group would experience several challenges related to responsible game design on the extremely serious topics of hunger and food security, given that gaming continues to be perceived as a frivolous element of youth culture.

About *Food Quest*

Food Quest is a browser-based, digital game for Canadian youth aged twelve to eighteen that aims to demonstrate and transfer knowledge about the complex linkages between food insecurity, poverty, and chronic disease. *Food Quest* was funded by the Public Health Agency of Canada and is hosted by Meal Exchange, a national youth-driven organization that seeks to educate and mobilize Canadian youth and communities in alleviating hunger nationwide. A diverse working group guided the development of the resource at all stages. Participants from across Canada, working in government, frontline organizations, and academia, and in both health and food security, represented a diverse set of approaches, priorities, and philosophical

¹ With regard to the use of serious games for education and social change, Ian Bogost (2007) supports the possibility that gameplay can be persuasive if a game's procedures are designed to express an argument or ideology. Rhetorical arguments can be carried by procedures, described as sequences of information derived from a combination of narrative, graphic design, text, sound and interactive game activities. A game's constraints, the meta-rules guiding the individual game procedures, create the framework in which the player plays. Each procedure then becomes a building block inside an already developed shell, whereby there is structure guiding the flexible and interactive experience of each player. Learning occurs as a result of the player's interaction with a series of activities or tasks, where knowledge and skill are built within the pre-designed framework that can include rules of play, narrative and the visual game space (Bogost, 2007; de Castell & Jenson, 2003; Gee, 2003).

² Iterative processes are the norm in game development (see Fullerton, 2008; Schell, 2008).

frameworks. Another team was hired to develop the game and the accompanying Facilitator's Guide. *Food Quest* was developed between 2010 and 2012 and is available to play for free at <http://foodquest.ca>.

Gameplay

The player can choose from five different character roles representing the range of food security challenges faced by people across Canada. *Food Quest* characters reflect demographics that are most vulnerable to food security issues, based on Canadian community-health survey data as well as ethnographic research (Edge & Howard, 2013). The characters are:

- **Brittany:** 18 years old, living in Vancouver, BC, unemployed
- **Anuk:** 23 years old, living in Iqaluit, NU, steady income
- **Josephine:** 47 years old, living in a First Nations Community in Thunder Bay, ON, on employment insurance
- **Jean-Baptiste:** 78 years old, living in Joliette, QC, on a fixed income
- **Meena:** 38 years old, living in Digby, NS, employed

The player must navigate through their chosen character's "food map" (Fig. 1), a maze that represents their community, to a final destination before they run out of money or energy. Energy depletes with every step but can be replenished by picking up food items, most of which cost money. Money cannot be replenished, so it must be budgeted carefully. There are "healthful foods" that are usually more costly but provide long lasting energy, and "unhealthful foods" that provide short spurts of energy but are less expensive. Food is available from various sources, including restaurants, grocery stores, convenience stores, and hunting and trapping. Some sources, such as food banks and dumpster diving, offer valuable sources of free food for survival.

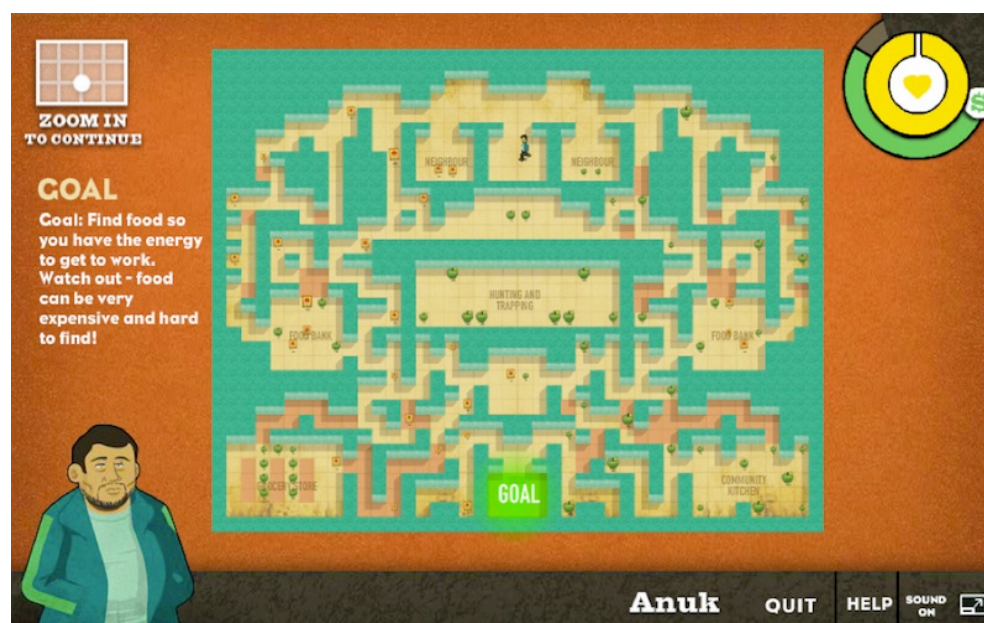


Figure 1

The structure of each maze reflects the accessibility of different foods and food sources to the different characters. Sources with healthful foods tend to be less accessible. On Anuk's map, for instance, hunting and trapping—a significant source of free and healthful food in the north—is surrounded by maze walls without any openings, representing the fact that Anuk cannot afford the required tools and weapons. Some food sources are surrounded by “rough terrain”—spaces that deplete more energy per step. These areas represent the added effort it would take to gain access to those food sources, either because of limited business hours or geographical inaccessibility. Food sources with primarily unhealthful foods such as convenience stores have more maze openings and little rough terrain surrounding them. The game also imposes random and unexpected challenges on the player, adding rough terrain to the map. These represent unexpected life events that can affect one's food security, such as a vehicle breaking down.

As the player moves through the maze, her character provides additional information and feedback either through dialogue or body language (Fig. 2 and Fig. 3).

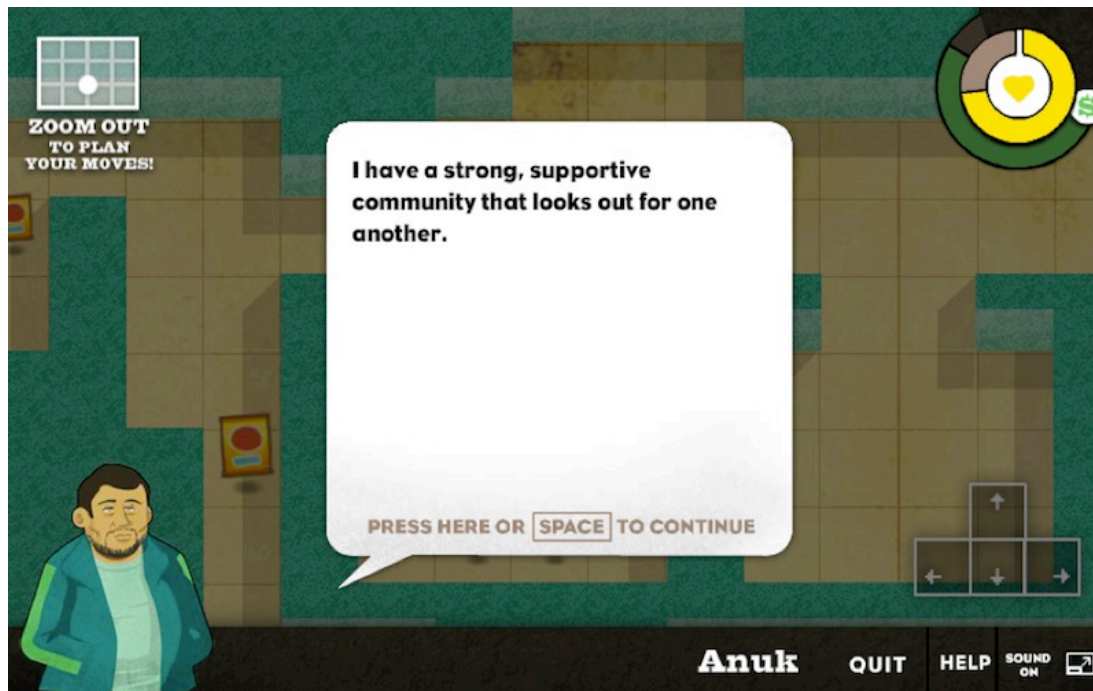


Figure 2



Figure 3

The game ends when the player (a) reaches her destination, (b) runs out of money, or (c) runs out of energy. *Food Quest* then provides an analysis of the player's game. The possible outcomes are:

1. Goal achieved, mostly healthful food consumed
2. Goal achieved, mostly unhealthful food consumed
3. Goal not achieved because budget ran out, mostly healthful food consumed
4. Goal not achieved because energy ran out, mostly healthful food consumed
5. Goal not achieved because budget ran out, mostly unhealthful food consumed
6. Goal not achieved because energy ran out, mostly unhealthful food consumed

The mazes are designed to make it very difficult to reach one's destination on the first attempt. Following the analysis, the game presents the player with the option to replay, but with a game variable altered. Three choices are offered: (a) increasing the amount of money a player begins with, (b) lowering the price of healthful food items, and (c) removing maze walls. All of the choices improve one's chances of being food secure and completing the game. The first two choices represent improvement through economic means, while the third represents other types of improvement, including physical access and greater food acquisition or preparation skills. After the replay ends, the game provides a new analysis based on the player's performance given the altered variable. This replay option is perhaps the most distinctive feature of *Food Quest*.

The game is intended for use in facilitated, face-to-face group settings, such as classrooms and community centres. Having people play in isolation was deemed unsupportive of the game's goals for numerous reasons. Although food insecurity affects people in personal and

individual ways, it is a community issue because it produced by more extensive forces, such as those due to food-system structures and community planning. In addition to raising awareness about the issue, the game was also intended to inspire and assist local food security initiatives; the post-game discussions and ideas that arise in a community setting are more difficult to initiate and facilitate in, for example, an online forum (i.e., the setting in an isolated-play scenario). Finally, any electronic knowledge transfer resource is subject to the limitations of its medium. In the case of a digital game, it is very challenging to expose the player to all the information included in the game, as the player discovers certain types of information through her own gameplay. Facilitated discussion allows players to learn from each other's choices, and to bring their own knowledge and experience of the issues into the conversation. A facilitator's guide is available, so group leaders are not required to be experts in food security or games.

From working group to digital game

Food Quest was one of several “knowledge to action” projects that were generated as part of the *Food Security Knowledge Initiative* (FSKI). Supported by the Public Health Agency of Canada, the purpose of FSKI was to advance action in the area of food insecurity and chronic disease risk while testing and learning about strategies and tools that facilitate effective knowledge exchange. In 2009, as part of FSKI, participants identified the need to raise awareness of the issues related to food insecurity and chronic disease. In particular, they sought to create an interactive and educational communication resource for public audiences that would support knowledge transfer and demonstrate the complex linkages between these interconnected issues as accurately and faithfully as possible, while maintaining audience engagement. Parameters were wide and participating organizations and partners were diverse. Representatives from national and provincial chronic disease and food security organizations, community-based groups, academics, and government representatives participated in a hands-on working group. The initial stages were funded by the Public Health Agency of Canada's Centre for Chronic Disease Prevention.

The creative agency and design studio The Public was hired to guide the funder and working group through an exploratory phase in order to determine what type of interactive resource would be best suited for the content. The Public conducted an extensive survey of existing digital resources in the issue area and made the following observations:

- no resources were found that were specifically focused on or demonstrated the linkages between food insecurity, poverty, and chronic disease
- most resources opted for more individual, rather than community or system-level calls to action, for example encouraging audiences eat more healthfully, buy local foods, and exercise more
- the most prevalent audience was the general public, i.e., people not working in fields related to the issues, such as policymaking, public health, and social services

- of this audience, young people were the key audience, perhaps because of their comfort and familiarity with digital media
- most resources took the form of documentaries and animated videos, i.e., storytelling media with no interactivity
- most resources were serious, dramatic, and ominous in tone

This knowledge of existing resources and the gaps therein helped the group develop the following creative brief:

Objective: To educate and raise awareness of the connections between food security, poverty, and chronic disease in Canada based on the latest research findings from the field.

Key Message: Ensuring access to good food for all is a key strategy for chronic disease prevention and a healthy Canada.

Audience: General public

Tone: Informative, accessible, personal, narrative

The Public also considered the strategic requirements of the resource, which included:

- establishing a personal connection and sense of empathy to the issues
- fostering a sense of concern and discomfort with food insecurity and its connection to poverty and chronic disease
- establishing an understanding of how the issues have an impact on the audience and their communities

With these parameters defined, The Public proposed two options. The first was a grocery shopping simulation game that challenged users to maintain a healthy diet with a limited budget and limited access to nutritious foods. The second was a map of interconnected videos that would invite the user to search for different food security narratives based on geographic, income, and health variables.

The group found both options exciting, and the presentation gave rise to a lively brainstorming session in which the group conceptualized a massive multiplayer online role-playing game that would represent multiple food sources and would incorporate video narratives. However, due to funding constraints and logistical limitations, the project scope was redefined as a one- or two-player game.

Games and knowledge transfer

Although few people in the working group expressed personal interest in or familiarity with digital games, they were excited by the innovative ways in which the medium would meet the objectives of the FSKI. In particular, there was interest in exploring novel ways of transferring research evidence other than through academic publications and reports in order to expand, reach, and catalyze conversations and exchange. The very nature of *Food Quest* as a digital game—still a rather uncommon medium in the public health realm—would attract attention and potentially offer greater reach. Role-playing would allow people who do not have personal experience with food insecurity to gain first-hand, empathetic insight, without being made to feel guilty or lectured to. By representing the issue at a systemic and community level, the player would better understand the complex and often indirect connections between economic status, health, community planning, and food security, through exploration and discovery. Inviting users to play as individuals in a complex system allowed for an in-built balancing of system critique and individual agency. Creating rules that define the food system and a variety of individual conditions would allow for agency within a constrained set of choices.

Despite this, the group had concerns about the connotations of the word *game*, especially since *Food Quest* is less about entertainment than it is about sharing evidenced-based research information with the player. Would producing what is seen largely as an entertainment medium trivialize a very serious and urgent issue? Furthermore, games by definition should be fun to play, yet food insecurity is decidedly not a fun experience. Would a fun experience of food insecurity undermine the game's objective? Digital game-based learning continues to be met with a high degree of skepticism, primarily because play and games are typically positioned as being antithetical or averse to the “serious” task of learning, which is rarely conceptualized as a pleasurable activity (de Castell & Jenson, 2005). To address this discomfort, the group decided to call the resource a *simulation*. The term still referred to interactivity, system design, and role-playing, but had none of the negative connotations of the word *game*. Curiously, as the process unfolded and the working group became more involved in the design and content, the word *game* gained favour and *simulation* fell out of use. The development team's key challenge was honouring the seriousness of the issue while making the game engaging enough for players to want to continue playing.

Although a digital game can house a vast amount of information, a player will only be exposed to content that is directly relevant to their play at that time, potentially leaving a large portion of in-game content unaccessed, and thus not learned. To circumvent these gaps in knowledge transfer, an accompanying Facilitator's Guide was developed. The guide details how to engage *Food Quest* players in post-game follow-up discussions on the issues, and possibly activate people into action. This guide included:

How to Play *Food Quest*: A description of *Food Quest*, instructions for play and a description of the five characters that a player can choose.

Notes for Activities: Step-by-step instructions and materials lists for facilitating four different activities.

Appendices: Resources for facilitators to increase their understanding of food insecurity and chronic disease or to develop a knowledge foundation to comfortably facilitate the topic.

Arriving at a design

In late 2010, the development of the resource itself began. A development team consisting of a producer, game designer, programmer, and musician was hired and managed by The Public. As a first step, the development team and working group thoroughly discussed the proposed game content and features, arriving at the following design criteria:

- the player can choose from several different characters to play, representing people across Canada with food security challenges specific to their location, economic status, and other social determinants
- the player will be required to complete a task, of which the probability of success is determined by their chosen character's abilities and resources
- upon completing the task successfully or unsuccessfully, the player can choose to replay with a selected variable changed that would improve the chance of success
- the game will focus on demonstrated linkages between food security, poverty, and chronic disease

Based on the criteria, the development team conceptualized two game ideas, which were presented in person to the working group in January 2011. The first, called *Grocery Gathering*, was based on the game idea proposed in the strategy phase. The player must purchase one week's worth of groceries within a limited budget, weighing the needs of eating healthfully and satisfying hunger (Fig. 4).

Concept 1: Interaction



13.01.11 Concept Presentation

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Figure 4

The second idea, called *Food Quest*, offered a more metaphorical approach. It required the player to survive in an abstract world, buying food items on a limited budget (Fig. 5).

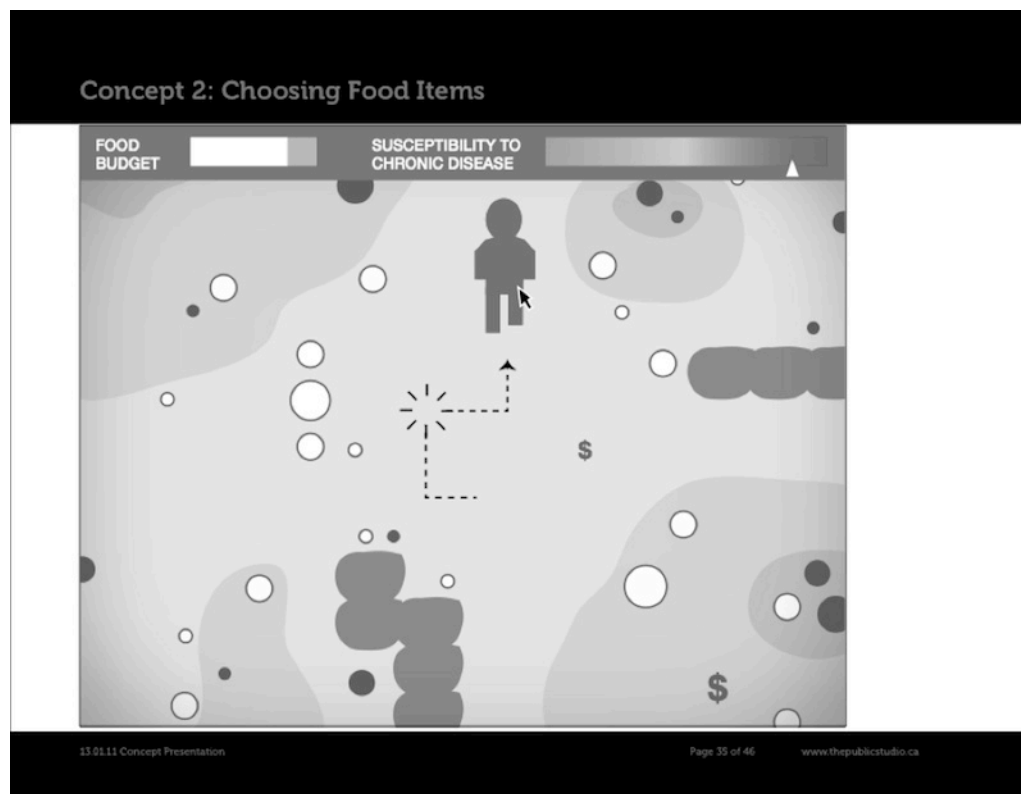


Figure 5

Food Quest was selected over *Grocery Gathering* because of its potential to represent a variety of food sources and a greater sense of player agency. From an engagement perspective, it seemed less overtly didactic and more interesting.

Reflections on the process

Although the development team was well acquainted with the game-making process and had prepared a development plan, the process of creating *Food Quest* was significantly slower, more emergent, collaborative, and iterative than originally intended. With “serious games,” the biggest challenge to development is what, initially, appear to be conflicting goals of various team members: the stakeholders’ legitimate need to present its messages and learning outcomes correctly, and the developers’ desire to make an engaging system or simulation. *Food Quest*’s timeline was delayed by the development team’s need to understand the content and messages of the game more thoroughly, and for the working group to understand the possibilities and opportunities afforded by working within this medium.

This collaboration is often unique to serious games. With studio-initiated games, the scope of a product like *Food Quest* could range from eight months to two years, depending on the depth or complexity (number of assets, etc.) required. A major difference is the “ramping up” phase of the project, where all stakeholders need to fully understand the content, mission, and language that is required for the digital game to be effective. The timeline was also lengthened because each phase needed to pass through a competitive proposal and procurement process with the Public Health Agency of Canada.

The process consisted of presenting game builds, play-testing among the working group as well as other players, gathering feedback, exploring these new ideas and suggestions, implementing changes and new features, then presenting new builds (Fig. 6).

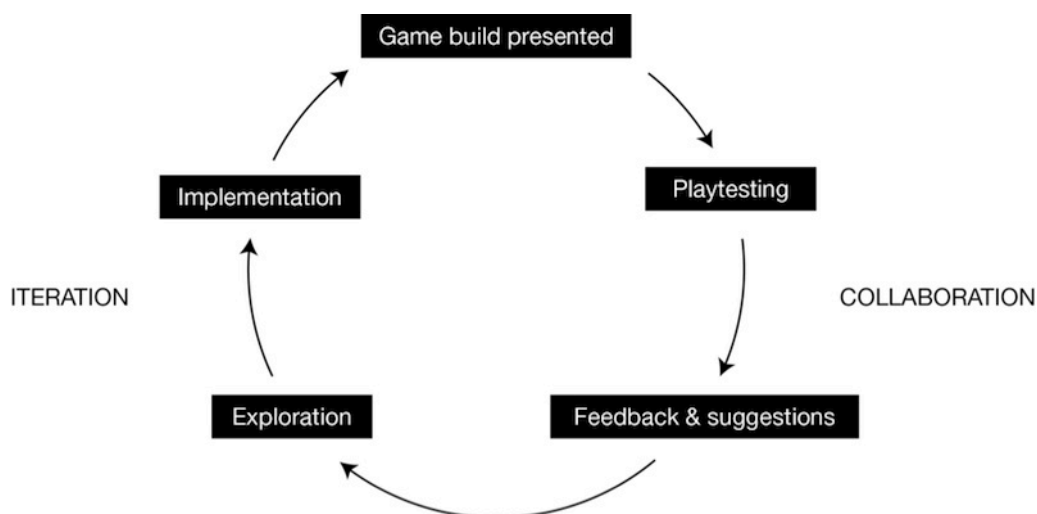


Figure 6

There are numerous explanations for which this iterative process was followed rather than a more linear approach. The working group was facilitated—rather than directed—by a representative of the funder, which contributed to an organic, consensus-based decision-making process and a group culture in which the members were actively engaged and more open to compromise. Attempts were made at each point in the process to incorporate input from all of the working group members and to reconcile, to the extent possible, their diverse philosophies, perspectives, and approaches. In terms of expertise, the distribution of knowledge between the working group and development team meant that discussion and collaboration between the two were integral to appropriately translating knowledge about food security, poverty, and chronic disease into game rules and features that would be both interesting and meaningful. The endeavour itself—creating a game about food security—was new and innovative and thus had potential risks associated with it. This sense, coupled with most of the working group’s unfamiliarity with digital games, meant that game features needed to be built and playtested to be understood and evaluated. Interacting with these features through gameplay often resulted in reversing decisions that had been made at earlier stages, giving rise to more builds than initially anticipated.

Development was also delayed in part due to the working group’s commitment to accurately represent the complexity of these issues. Game design decisions were intensely and repetitively scrutinized from multiple perspectives to ensure that *Food Quest* was fulfilling its objectives. The discussion around implementing a countdown timer, for instance, demonstrates how the inclusion of a common (and often taken-for-granted) gameplay trope in commercial games can mean something very different in the context of educational or serious game design. Some members felt that a countdown timer added nothing but unnecessary time pressure to an already stressful gameplay experience, while others noted that competitive play might create a more motivating and engaging experience. The final decision was a compromise: a discreet count-up timer that could only be seen if the map was fully zoomed out. Recording the length of time it took for the player to finish the maze enabled a competitive game play experience (players could compare their completion times) without the risk of creating a game that would not be enjoyable to play.

The team was also rigorous in the selection of in-game content, and was careful not to use or organize information in ways that were inaccurate or suggested outcomes that could not be supported by research. For example, how should food items be represented? Should consuming an apple provide the player with the exact amount of energy (in calories) that one would get from eating a real apple? Does representing the food in an abstract way (“healthful” or “unhealthful”) oversimplify or misinform the player (i.e., that eating apples is a preventative measure against future health problems)? Issues related to food insecurity and chronic disease are incredibly complex, and with the exception of depression, it is difficult to make a knowledge claim regarding direct links or cause-and-effect relationships between the multiple layers and nuances of these issues. Indeed, it is the ability to show the complexity of these issues that make a digital game more appealing over other formats. A well-designed educational game requires

that meticulous attention be paid to decisions around design and content (e.g., win and lose states, replay conditions, speed of gameplay, character speech, sources and cost of food, etc.), as well as how these elements affect the gameplay experience and the knowledge that is acquired.

In addition to collaborative and attentive nature of the design process, other factors contributed to the extended development time frame. The working group was comprised of experts volunteering their time and participating from different time zones. Because of the commitment to consensus building, it was important that as many people as possible could participate in meetings, conference calls, and email threads. This resulted in gaps between builds to allow sufficient time for all members to provide feedback. Delays were further exacerbated by funding gaps and administrative processes. This longer than anticipated development process contributed to a degree of attrition in the working group membership, which was countered by inviting new members to participate after the launch of the beta version of *Food Quest*. However, because less feedback was required at this stage, engagement waned.

Although it delayed the development timeline of *Food Quest*, this unusual process was beneficial in many ways. Working group members were intimately involved in decisions and tradeoffs that were made in development, which may have assisted in keeping members involved through the multi-year process. The final game reflects multiple perspectives on food security from experts across the country. Without collaboration, the game might have been fun to play but lacking in meaningful content; without iteration and push back from the development team it might have been informative but uninteresting to play. Ultimately, *Food Quest* balances the player's desire for an engaging experience with the working group's goal of transferring knowledge.

Audience

One of the questions that was revisited was "Who is the game's target audience?" The working group initially defined the audience as the general public in the hopes that the resource would reach as many people as possible and reflect the multiplicity of perspectives the group represented. However, the development team struggled with this and was concerned that it would be impossible for the gameplay, difficulty level, artwork, writing, and music to appeal to everyone of all ages. As the game began to take shape, the target audience narrowed significantly. Because games are a relatively new medium, the group agreed that younger people would be more receptive to game-based learning. This was confirmed after testing the game among the working group and volunteer play-testers: although adults found it engaging, youth gained more insight and meaning from the experience. Upon deciding that the game would be presented in a facilitated context, the group identified that its greatest opportunities were in middle schools, secondary schools, and universities. The development team iterated the art style, difficulty, and writing with this in mind.

Preliminary evaluation

Food Quest was field tested in eight locations across Canada during a two-month span from January to March 2012. Field tests were conducted in high schools, on university/college campuses, and in community settings to determine the optimal game environment. Survey methodology was used and the main focus was on the gameplay and usability experience as well as learning outcomes. Although the field testing had a limited timeline and sample size (122 respondents), valuable learnings were gathered. In addition to constructive feedback on improvements related to usability, there was also evidence of self-assessed knowledge gain. The importance of using *FoodQuest* as part of a facilitated experience, as opposed to a stand-alone game, was also confirmed through respondent feedback.

At the time of writing, *Food Quest* is still seeking feedback from players and workshop organizers on how to improve the game and identify potential audiences.³ Our colleagues reported that during preliminary play-testing sessions, players did gain insight into the interconnections between physical, geographical, economic access to healthy food with food insecurity, chronic disease and poverty, and that the game also showed promise as a facilitated educational experience. When *Food Quest* was presented to attendees of the Chronic Disease Prevention Alliance of Canada Conference, it had strong appeal and there was significant interest in using the game in chronic disease prevention and public health work. A facilitator involved in the testing phased shared the following positive feedback:

I think that having a facilitated workshop made playing *Food Quest* more educational. Providing them with the character pages and explaining about the Take Home Facts From the Game gave more depth to their experience. For example, one participant had Brittany, and she kept saying something along the lines of “Will my life ever get better?” That we were able to make links between poor nutrition, and chronic mental illness, and depression, created a learning opportunity.

Based on the acclamations attributed to issue-based games such as *Ayiti: The Cost of Life* (Dahya, 2009) or persuasive educational games such as *Outbreak* (Kee & Bachynski, 2009), it seems that digital games have a promising future and will likely play an integral role in twenty-first-century public education. Although *Food Quest* is not (and cannot be) the most detailed and quantitatively informative resource, it does offer an innovative and engaging way to build awareness and empathetic understanding of the issues. Moreover, it is the only interactive resource available that might appeal to youth—the adults of tomorrow who might be facing or tackling these issues themselves in the future.

³ To contribute to this feedback, please go to <http://foodquest.ca/index.php/fdback.html>

Recommendations

Digital games are a new medium; newer still is their use as educational tools. The making of *Food Quest* was as much a creative process as it was a process of discovery. Based on these experiences, we make the following recommendations to those interested in developing a socio-political game:

1. **Consider whether a game is the most appropriate medium for the content and message.** Games work well for resources that need to demonstrate how a system works and how it can be changed, that aim to foster empathy, and that lend themselves to learning through either winning or losing. Games also encourage and create an active learning experience, which has shown to be more effective for knowledge acquisition. However, games are less able than conventional resources to present a large quantity of content and evidence. Games teach through doing; if the content requires a focus on reading and reflecting, a game might not be the most appropriate medium.
2. **Those working on the content side must be, or become, familiar with games.** A lack of shared gaming vocabulary and unfamiliarity with certain game features and tropes requires additional time for explanation and demonstration. Improving game literacy through playing games as a group and discussing what makes some work better than others can speed up the process. A game development team should facilitate this learning process by assembling and demonstrating a set of games that use the proposed features, as well as games that are both engaging and educational.
3. **Those working on the game development side must be or become familiar with the content.** Translating content and messages into gameplay requires that the developers have an in-depth understanding of the issues. Before the development team begins designing a game, the members should immerse themselves in readings provided by the working group. Having knowledge of the issues allows for more effective communication of ideas between the working group and development team.
4. **Seek uptake opportunities.** Although games are becoming more widely accepted as educational tools, there remains a significant degree of unfamiliarity with the idea of games for learning and their value in knowledge transfer. This can hinder uptake and enthusiasm, thereby limiting the potential reach of the game. Working groups should identify organizations, institutions, and individuals that might be open to using a game and then tailor the game design to those audiences. Alternatively, identifying a specific audience and key settings from the outset (or earlier) may be preferable.
5. **The funder and participants must be prepared for an iterative and non-linear development process.** Game development is essentially a trial-and-error process. A gameplay hypothesis is formulated and can be best tested through building and playing the game. Feedback then modifies that hypothesis, which requires a new build and repeated testing. This trial and error process will be particularly true when the gameplay is relatively unusual, rather than being a remake of a pre-existing game style or genre. A

funding organization that allows for flexible accountability and funding mechanisms, and that explicitly embraces risk-taking as a critical precursor to innovation would be best suited for funding an educational game.

6. **Carefully consider the structure and decision-making process of the working group.** Working groups should be structured to maximize participation and incorporate a multiplicity of food security perspectives. This will make for a more consensus-based, participatory process and a final resource that better represents the complexity of the issues. If the group is made up of people who live in different time zones and work on the project in a volunteer capacity, scheduling calls, gathering feedback, and making decisions may prove time-consuming. For projects that require more rapid development cycles, this needs to be considered. Moreover, while including a diversity of perspectives contributes to the richness of the end product, it may also make achieving consensus and defining a clear and well-honed message more challenging. Pleasing everyone in the group may come at the expense of a diluted mission statement or objective. An in-person briefing meeting and creative presentation may prove productive; teams might also consider meeting more frequently to “jam”⁴ on game iterations in real time.
7. **Know the audience and the context.** Although the defined audience and context for a game may shift through the development process, coming to a concrete understanding of both will assist in making design and content decisions.
8. **Know how the audience should be engaged.** Understanding the kind of experience the player should have will help determine what kind of engagement should be engineered. Games may not be intended to be joyful or fun; rather, a team may hope to engage the audience through other means, such as the tension of challenge and suspense. Players may remain engaged throughout a game because it presents a challenge that can be overcome through skill and reasoned decision-making. The challenge itself, in addition to a system of feedback and reward present in most games, will keep the player engaged, even if the game is not typically “fun”.
9. **Know that this is new territory.** There is still much to be learned about what makes for an effective social-justice oriented game, and there is no singular formula for a smooth and rapid development pipeline. This means that, compared to older and more conventional educational resources, there is a greater potential for development to run over budget and time, for the resource to be ineffective, and for uptake to be limited. Being aware of and accepting these risks might not prevent failure, but can provide perspective when the process seems frustrating or unfamiliar.

Engaging in participatory processes to inform the design of technology requires a mutual respect for and an understanding of the diverse perspectives and disciplinary cultures of working group

⁴ A game jam is an organized get-together with the intention of creating a game—usually in its entirety, from conception to completion—in a pre-determined, short period of time.

members (Kensing & Blomberg, 1998; Muller et al., 2003). Although scholarly inquiry on digital games is strongly supported here in Canada (see the Canadian Game Studies Association), this was not the case a decade or two ago. Beyond a small (but growing) interdisciplinary community, the legitimacy of Game Studies as an academic field is not as respected as its analog media predecessors, (e.g., Film and Television Studies) (Parker, 2013). Indeed, many presentations and publications about non-entertainment uses for digital games still require scholars to include a justification for studying digital games in the first place. This is indicative of how Game Studies continue to be challenged as a legitimate field of scholarly inquiry, which can extend to undervaluing the scholarly expertise surrounding the design of socio-political or serious games with educative potential.

Game designers working with a team of multiple stakeholders can find themselves in a similar situation, in that they may be the ones who nurture these ideas from concept to product, even as their expertise is undervalued during the process or rendered invisible during knowledge dissemination. Designers and developers are encouraged to play with the underlying technical, conceptual, and social systems of their work, and engage in a creative collaborative practice that is central to the new economy (O'Donnell, 2014). An ongoing challenge in serious game development is thus establishing the legitimacy of digital games as a scholarly field and professional practice that simultaneously encourages (a) building on expertise (or expert knowledges), and (b) engaging in boundary-pushing and experimentation in the name of innovation. In short, working in digital games encourages practitioners take risks in design, which may create uncomfortable working conditions for some group members (at least initially).

Conclusion

The goal of this field report was to share, from a practitioner standpoint, the processes, challenges, surprises and lessons learned from the experience of designing and developing the game *Food Quest*. In addition to the recommendations above, this report shares what can happen when like-minded, committed people work together to bring about a shared vision of change; in this case, a Canada in which all people have access to healthful and affordable food. While the innovative nature of educational games is typically at odds with the risk-averse cultures that they are now starting to serve, the benefits are evident. In the words of one member of the working group, “trying something new is a courageous risk—parts of it may work, other parts may not—you need to be able to critique the costs, benefits, successes and failures realistically as you go along. We still have a lot to learn regarding the best use of new technologies.”

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References

- Ayiti: The Cost of Life*. (2006). Retrieved November 11th, 2012, from http://www.unicef.org/voy/explore/rights/explore_3142.html.
- Bogost, I. (2007). *Persuasive games: The expressive power of videogames*. Cambridge, MA: MIT Press.
- Dahya, N. (2009). Serious learning in playful roles: Socio-political games for education and social change. *Loading...*, 3(4). Retrieved from <http://journals.sfu.ca/loading/index.php/loading/article/view/63>
- Danielsson, K & Wiberg, C. (2006). Participatory design of learning media: Designing educational computer games with and for teenagers. *Interactive Technology and Smart Education*, 3(4), 275–291. doi:10.1108/17415650680000068
- Darfur is Dying*. (2006). Retrieved September 15th, 2013, from <http://darfurisdying.com>
- de Castell, S., & Jenson, J. (2005). Videogames and digital game play - The new field of educational game studies. *Orbit*, 35(2), 17–19. Retrieved from <http://search.proquest.com.ezproxy.library.yorku.ca/docview/213739983/13AFF974DFA/B8877FA/1?accountid=15182>
- Edge, J., & Howard, A. (2013). *Enough for All: Household Food Security in Canada* (p. 57). The Conference Board of Canada. Retrieved from <http://www.conferenceboard.ca/e-library/abstract.aspx?did=5723>
- Games for Change. (2009) Games for Change Conference Assessment Workshop Summary | *Games for Change*. (n.d.). Retrieved from http://www.gamesforchange.org/g4cwp/wp-content/uploads/2011/06/Games_and_Assessment_2009_Summary.pdf

Gee, J.P. (2003). *What video games have to teach us about learning and literacy*. New York: Palgrave Macmillan.

Homeless: It's No Game. (2006). (West Coast Solutions) Retrieved October 25th, 2012, from <http://www.wetcoast.org/games/homeless/homeless.html>

Kee, K., & Bachynski, J. (2009). Outbreak: Lessons learned from developing a "History Game." *Loading...*, 3(4). Retrieved from <http://journals.sfu.ca/loading/index.php/loading/article/view/64>

Khaled, R. & Vasalou, A. (2014). Bridging serious games and participatory design. *International Journal of Child-Computer Interaction*. doi:10.1016/j.ijcci.2014.03.001

Mark, L., Paul, C., & Andrew, W. (2011). Participatory Game Design to Engage a Digitally Excluded Community. Retrieved from <http://www.digra.org/wp-content/uploads/digital-library/11312.28405.pdf>

Parker, F. (2013). Indie Game Studies Year Eleven. *DIGRA 2013 - DeFragging Game Studies*. Retrieved from http://www.digra.org/wp-content/uploads/digital-library/paper_100.pdf

Replay: Finding Zoe. (2007). Retrieved October 12, 2012, from <http://www.metrac.org/replay/index.html>.