

# The Gigue Is Up: High Culture Gets Game

**Jennifer Jenson**  
York University  
4700 Keele St.  
Toronto, ON, Canada  
jjenson@edu.yorku.ca

**Suzanne de Castell**  
Simon Fraser University  
8888 University Drive  
Burnaby, BC, Canada  
decaste@sfu.ca

**Nicholas Taylor**  
York University  
4700 Keele St.  
Toronto, ON, Canada  
nickttaylor@gmail.com

**Milena Droumeva**  
Simon Fraser University  
8888 University Drive  
Burnaby, BC, Canada  
mdroume@sfu.ca

**Stephanie Fisher**  
York University  
4700 Keele St.  
Toronto, ON, Canada  
lilfishkiss@hotmail.com

## ABSTRACT

This paper documents the design, development, and extensive play-testing of a Flash-based Baroque music game, “Tafelkids: The Quest for Arundo Donax”, focusing on the tension between constructing an online resource that an audience aged 8-14 would find fun and engaging, and the directive to include historical information and facts, as well as convey some of the sounds, musical structures and conventions of Baroque music, history and culture through play. We further document 3 large play testing sessions, in which we observed, in total, over 150 students aged 12-14 play the game. We conclude with a discussion of the particular challenges in designing a *bridge from propositions to play, in effect digitally re-mediating*, Baroque music education and thereby address the broader epistemological question of what and how we may best learn, and learn best, from games and play.

## Author Keywords

Educational games, serious games, music education, play learning, design-based research

## NEW MEDIA, NEW AUDIENCES

In today’s super-saturated, socially networked, ‘second-life,’ online, content-generating, 2.0, 3.0, ‘glocal’ culture, the world of Baroque music, to many people, not only feels like a relic from an inaccessible past, but it often looks that way as well. Just take a peek (in Canada, at least) into a public, fee-based concert with “Baroque” in the title and you’ll have your proof: rows of distinguished-looking older people who are clearly less “wired” than, say, your average cinema audience – there are no reminders here to turn off

your cell phone. So how does a group like the Tafelmusik Baroque Orchestra, based in Toronto, create an audience of appreciative, and informed younger listeners? In their case, they do an enormous amount of public outreach: Baroque education days for school children, the creation of a curriculum for teachers that matches specified ‘outcomes’ for provincial standards, the production of an award-winning CD for kids, and most recently their attempt to use the media that many youth (especially boys) are still so fascinated with – videogames.

This paper documents the design and development of a Flash-based Baroque music game, “Tafelkids: The Quest for Arundo Donax” (<http://www.tafelmusik.org/education/webgame.htm>) focusing on the tension between constructing an online resource that an audience aged 8-14 would find both fun and engaging, and the directive to include historical information and facts, as well as convey some of the sounds, musical structures and conventions of Baroque music, history and culture through play. While the tension between an educational game and its ‘curricular content’ (facts, figures, information) is not a new one [4, 8, 10, 11, 17, 18] what we attempt to document here is the process of working through that tension in order to reach an audience that might not be particularly disposed to Baroque music.

For this account of “design-based research” [3, 13], we begin by describing the various elements of the game, including the overall learning environment and mini-games, and their contributions to learning about Baroque music. We highlight some of the different expectations between our design team and our client, in terms of what ‘counts’ as

**Breaking New Ground: Innovation in Games, Play, Practice and Theory. Proceedings of DiGRA 2009**

© 2009 Authors & Digital Games Research Association (DiGRA). Personal and educational classroom use of this paper is allowed, commercial use requires specific permission from the author.

knowledge in a game meant to cultivate an appreciation for music. Similar differences were encountered, though to a lesser extent, in our play-testing sessions with children aged 12-14, and we will thematically highlight what we think was most significant from those sessions. We conclude with an account of some of the difficulties we had in re-conceptualizing educational 'content' in the transition from one medium (sound, in the case of the TafelKIDS CD) to an interactive, multi-modal, and highly graphical medium, and consider from this standpoint broader questions concerned with representation and epistemology.

#### **CONTENT WARS: WHEN IS IT 'BAROQUE' ENOUGH?**

Baroque music, while enjoyed by many (Vivaldi's "Four Seasons" as elevator music) is not necessarily a field or subject area with which many among 'the public' would be more than obliquely or shallowly familiar. And, while we might know something about the likes of Bach, Purcell, Vivaldi or Handel, we might not necessarily know what particular instruments make up a Baroque orchestra, nor would we be armed with the knowledge of the differences between a Baroque bassoon and its contemporary cousin. So when we, as educational game developers and researchers, began the project of creating a digital game about Baroque music, history, characters and instruments, we realized that we would have to become well-versed in a highly specialized discourse and subject matter ourselves, and that we would have to find ways to make it intelligible to a lay audience, (in this case, children aged 8 to 14).

Not only were we attempting to straddle the distance between insider and outsider knowledge of Baroque music, reconfiguring it for the graphics-driven medium of a digital game, but we were also faced with the problem of taking a rather traditional curriculum concerned with Baroque historical figures and instruments and translating it into play-based learning activities capable of meaningfully engaging youth for whom whatever is past is 'bo-ring!' The two primary epistemological issues we had when developing the game were based on the above problems: a) how to take the highly specialized discursive and skill-based practical knowledge of a professional Baroque musical group (Tafelmusik) and represent it in the form of a game for children, and b) how to convert their educational objectives into both play-based and knowledge-based digital media, which included both practical and historical knowledge, as well as introduce through interactive activities the very essence of Baroque music – with its core characteristics such as tempo, orchestration, continuo and notation styles.

In the first case, there were three primary spheres of knowledge that Tafelmusik, as the organization that commissioned us to design the game, wanted to cover: an historical understanding of Baroque music, including notable historical figures, instruments, and costumes; a practical understanding of Baroque music encompassing instruments, instrumentation (voices, continuo), and composition; and an opportunity to access and gain some familiarity with, and enjoyment of, Baroque music.

With these primary goals in mind, we began by first informing ourselves: what instruments make up a Baroque orchestra, who were the primary Baroque composers... and so on. We were given a kind of script to work from in the form of the Juno award-winning CD produced by Tafelmusik for children in 2006 with the same title, 'The Quest for Arundo Donax'. The CD tells the story of Henry Purcell's two children, charged by Queen Anne during England's war with France to travel to the court of the French king Louis XIV to acquire a special bamboo (its latin name being Arundo Donax) from which high-quality reeds were made (and are still made today).

This 'script' takes the characters through Venice and a visit with Vivaldi, and then places them in Versailles where they are granted access to court and fulfill their quest for the scarce reed. It was through this narrative that we confronted our first challenge: how to take this very quest-driven, linear narrative and build a Flash game around it. Embedded within the CD narrative were geographical and historical timeline constraints. As a prime example, while Bach (certainly one of the primary and most identifiable Baroque composers) was alive and composing, in 1704 (the year the narrative takes place) he had not yet established himself in Leipzig; so even if we expanded the narrative to include that relatively known musical center for Bach's compositions, we were too far off on the date to be historically accurate.

So here, we came up against a constraint around a narrative that worked very well as a story in a non-interactive medium but which, in its adherence to a specific time and place, left little room for the kinds of open-ended and non-linear exploration such a medium afforded. In the end, we left the original narrative in place as an overarching goal of the game, but moved to a less linear structure that granted a greater degree of freedom and choice characteristic of digital games. This, in turn, meant large concessions in terms of historical dates and timelines and geographical localization of music – strict historical fidelity gave way to play. What we settled on, then, was a hybridization of the story: Purcell's two children would become the game's 'playable characters', and would travel (via interactive map) to destinations which had previously been part of the original narrative -- Venice and Versailles – which would become the locations of small 'mini-games'. These mini-games would allow for some of the knowledge-building that Tafelmusik sought from all three angles: historical facts, instruments and instrumentation, and musical

knowledge and appreciation (see the next section for a fuller accounting).

Content supplied by Tafelmusik, which was not directly related to the game (and the narrative) presented our second major obstacle. How could we use information on select instruments and composers, including obscure facts on their contributions to Baroque music: that, for example, “Vivaldi uses the form of a solo concerto with alternating orchestral and solo sections but stretches the normal form by using the instruments to portray these dramatic effects” (from Tafelmusik’s “Baroque Learning Center”, at <http://www.tafelmusik.org/flash/learningcentre/index.html#>). In order to fully understand that sentence, one must be familiar with specialized vocabulary (solo concerto, orchestral sections), as well as historical composition – what is the “normal form” that is being “stretched” here?

Our project became then, not one of cutting and pasting content from one (textual) medium to another (games), which is all too often the case, but one of careful, time-consuming re-designing of propositionally-organized content to better suit an interactive medium [5, 8, 9], and of ‘high-brow’ culture to an audience with decidedly ‘popular’ knowledge and taste. For instance, Tafelmusik’s “Baroque Learning Centre” website (<http://www.tafelmusik.org/flash/learningcentre/index.html#>), offers an overview of musical instruments and composers which we were to incorporate, if not in a game format, then in a kind of extracurricular format. We decided this information was best left secondary to the game itself, but we incorporated it as an embedded interactive feature (see the following sub-section). What was not possible, however, was to transfer content directly from the learning centre site into the game: what was to be learned simply was not conveyed in a way that would make sense in a game medium and to its intended audience. Consider the bassoon, thus described on the learning center website:

*The baroque bassoon has a much larger and more conical shape bore than its modern counterpart, and requires a larger double reed to produce proper tone. These features give the baroque bassoon more flexibility of articulation as well as a softer, less concentrated sound. This makes it ideal for blending with the cellos and bass, which is its usual function as a member of the continuo section of the baroque orchestra.*

Rewritten for our purposes, there is a qualitative difference in the information being imparted. We wrote:

*The baroque bassoon is hollow wooden instrument. It is constructed differently than bassoons of today, for example, its "bore" – the hole bored through the instrument, was larger. The bassoon has the widest range (low to high notes) of any baroque woodwind instrument, a little more than two and half octaves, from B flat to G). Fun Fact: Bassoonists control no fewer than 13 keys with their thumbs alone!*

The point here is that the information is not entirely different. Where the emphasis in the original is on the relationship of bore and reed to tone, technique, and function, however, we focused on the more widely accessible and meaningful terms of musical range. We arrived at this necessary re-presenting of information precisely by being ourselves members of the ‘outsider’ public that is to benefit from making this insider knowledge available, following the design-based reasoning we mention earlier.

But these were the facts, and what seemed to us to be the primary objective of the game was to engage an audience, not with facts, but with Baroque music. In the following section we describe how we think we accomplished this through the various playable elements within a responsive game shell (which houses the mini-games and where a player’s progress is displayed) and through three quite different mini-games that draw on currently popular and accessible gameplay mechanics to deliver relevant content in relevant ways for to a wider (and younger) audience.

#### **DEVELOPING PLAYFUL APPRECIATION**

After login, the first-time player is taken to the court of Queen Anne where, as in “The Quest for Arundo Donax” CD, the two characters are introduced to the Queen. A brief, sparsely animated cutscene introduces the narrative, and gives the player their quest – to play the mini-games, fill out the musical score on the map (representing their progress through the games), and find the elusive Arundo Donax plant so the English bassoon and oboe players are able to make new reeds. The player then is invited to choose their ‘traveling costume’ from a small array of clothing options, and is taken back to the map from which they can navigate to other mini-games and content. The primary goal of the game is to fill in the musical score, unlocking tracks that can be downloaded and replayed. The following sections will describe each of the individual elements that comprise the game and conclude with a brief discussion of some fundamental relationships between play and education.

#### **Housing Content: A Baroque Game Shell**

Given that, as we have indicated before, we had a significant amount of static content (historical figures, composers and baroque instruments) to be embedded somewhere in the game, and that we also needed, narratively, to convey a sense of movement, we created a map to house both the mini-games and much of the “curricular” content (Figure 1). This stylized map of Europe was partially based on the original narrative that moved the characters from England to France, and on the original artwork that was created to accompany the CD. From the map, players access not only the mini games, but also the embedded content: historical figures and descriptions of baroque instruments.

The map, furthermore, indicates a player’s progress in the game, through a musical score (a kind of progress bar) that

fills in as mini-games are completed. Musical instruments are perused through clicking on the interactive frame near the bottom. Historical figures and composers are explored by clicking on their location on the map, which activates a series of anime bubbles presenting brief facts about that figure's life (Purcell, in London, for example: see Figure 1), while a short musical excerpt associated with that figure plays. During the first activation of that content, a player cannot close the facts and musical piece, in effect, enforcing listening for the duration of the track, even if users do not choose to read the facts about the composer's life. Once they have fully listened to the short musical track (with its associated information bubbles all displayed), players can click on and off music segments and information freely.

This kind of enforced listening is meant to introduce the player, however briefly, to the broad musical repertoire that makes up the Baroque 'canon'. Play occurs through the game shell in the form of basic interactive 'call and response', and it is here that the educational content is most didactically and heavy-handedly served to players. Because we wanted an enforced structure of click-listen interaction to occur, the game shell seemed to be the primary place to house the 'core curriculum' content we were to encompass within the larger framework of the game.



**Figure 1:** The game shell: a stylized map of Europe

### The Baroque Orchestra Game

The primary objectives of this mini-game are to learn about orchestration and the instruments that comprise a Baroque orchestra, and to distinguish between those instruments, on the basis not in facts about that instrument (the objective of the game shell information bubbles), but rather upon the ability to recognize the distinctive voice and characteristic contribution of each to the Baroque orchestra, delivered through an interactive nine-piece orchestra. The game's tutorial begins with the player listening (in whatever order they chose) to each of the instruments playing their own part of a larger orchestral piece. Once the player has listened to each of the solo voices of the instruments, the entire orchestra plays the piece, bringing each individual

instrument's part together – for which we also introduce small items of musical discourse (e.g. the command to play together: "tutti"). In level one, players discern from a random selection of solo musical pieces which instrument is playing – capitalizing on the tutorial. In level two, the vocabulary of multiple voices is introduced (duet, trio, and the Baroque bass line, 'continuo', supplied by the harpsichord and double bass) and players are asked to try to identify, based on their distinctive sounds learned in prior levels of play, which instruments are playing together. In the final level, 'free play' is given to the player and they can arrange instruments in any order, attempting their own orchestrations with all the various parts available to them.

Again, what we are trying to introduce in this game is the different instruments, sections and configurations of a classic Baroque orchestra. But we are trying to do this musically, not propositionally. Most of what's to be learned through playing this mini-game is readily accomplished through trial and error on the part of the player as well as through replaying the parts that a player misjudges. Through a de-composition and playful re-composition and recombination of orchestral music, players can come to appreciate and indeed hear the orchestra, not only as a whole but also in parts, affording a completely different, and far richer experience of Baroque music. While it remains to be seen whether this approach is effective in teaching basic musical understanding in a more embodied way, it is certainly the case that among the development team members, most were at the outset unable to distinguish different musical voices, but after interacting with the game, found themselves humming the several parts of the music, having learned the various harmonies and melody through playing, and found that they were able, upon listening to very different music, to correctly identify the instrument being played.

### The Musical Inscription Game

While the orchestra game described above fosters attentive listening to subtle differences between various Baroque instruments through a basic point-and-click, the main objective of this 'inscription' mini-game is to introduce players to the look and 'flow' of Baroque composition. In this mini-game, inspired by the popularity of rhythm-based games (particularly, *Nodame Cantabile*) and *Osu!Tatakae!Ouendan!*), the player sees a moving horizontal timeline of an original Baroque score, in which some notes have been made 'active'. The player has to click each active note as it passes between two bar lines on the left side of the screen.

Our mini-game game requires players to click the correct position of 'active' notes on a horizontally-scrolling musical score. Listening to the music helps players to read ahead in the score, and anticipate the next actions. The game begins with the player having to fill in parts of a continuo (Baroque bass line). Players then progress to more

complex arrangements requiring the player to fill in more notes. In the final level, the player is faced with concurrent scores representing two different parts of a piece –two parallel staves both containing notes that advance in time with the music.

The educational affordances of this game stem directly from our appropriation of popular commercial rhythm games. While, too often, music soundtracks, not to mention soundscape components, are relegated to the periphery of games and serve a primarily affective function – complementing the mood of the player rather than supporting or advancing the gameplay itself – rhythm games require a listening attention and eye-hand (embodied) coordination that is unique. To invoke Truax’s notions of listening positions – modes of listening attention that he argues have specifically developed alongside advances in technology and media soundscapes among others – the genre of rhythm games, and by extension our educational game example, move the listening position of the player from background or distracted listening to “analytical” listening [20].

According to Truax, analytical listening is a type of auditory attention that goes beyond affective appreciation and into subtle deconstruction of the basic building blocks of music –tempo, timbre, flow, pitch and envelope, among others. Yet Truax’s point rests still on attentive non-interactive listening. Rhythm games offer another dimension for the player to connect to the music, as they activate melody through their inputs. This affords a unique kind of listening that is not only analytical, but embodied and *participatory*.

### The Gigue is Up: A Baroque Dance Game

After completing the mini-games described above, players unlock the last mini-game, taking place in the Hall of Mirrors at Versailles – the court of Louis XIV, the ‘Sun King’. Here, the game’s narrative reaches its conclusion as players must literally dance their way into the king’s favor, so that he will grant them a supply of Arundo Donax to bring back to England.

As with the orchestration and inscription mini-games described above, play mechanics are modeled after popular music-based games: in this case, *Dance Dance Revolution* (DDR). Like DDR and its multiple PC or web-based spin-offs (such as *Stepmania* and *Flash Flash Revolution*), arrow icons move vertically across the screen and the player must press the corresponding arrow keys at the appropriate time (Figure 2).



**Figure 2:** Dance for the Sun King!

Unlike these other dancing games, however, which commonly feature backgrounds of abstract visuals, our characters actually dance in time with the music, meaning that players are actually performing a digitally-mediated Baroque dance choreography. Combinations of arrow keys and w, a, s, and d keys move characters in semblances of Baroque dance steps, from the basic plié and élevé, to more advanced steps like the pas assemble and pas-coupe.

Key prompts are synchronized to the downbeats of the musical tracks, so that as with real Baroque dance, characters perform a step with every beat. Each difficulty level corresponds to a type of dance, from the relatively slow Menuet, to the more up-tempo Gigue, and finally to the fast-paced Bourrée. Well-timed keystrokes result in fluid dancing motions that raise the Sun King’s “Mood Meter”. Pressing the wrong key, or mistiming a keystroke cause the character to stumble, resulting in a lower Mood Meter score. A high score wins the favor of the Sun King, resulting in a concluding cut-scene taking the player back through each ‘stop’ on their journey to the sound of growing applause.

As with our other mini-games, this dancing game engages players in a form of Baroque cultural expression, rather than through the exposition of historical facts. This is accomplished through the amplification of player input, which Poole [16] among others describes as one of the central pleasures digital games afford: with minimal, but timely input, the player’s character executes complex and fluid movements imitative of the grace, decorum and precision that were upheld as virtues of formal Baroque dance. Historical fidelity is achieved through representation and play: the stage is modeled after the Hall of Mirrors in Versailles, the characters’ animations are modeled on Baroque dance steps, and the audio tracks are representative of the kinds of dance music favored by Louis XIV’s court.

A small but significant anecdote relating to the development of this mini-game illustrates the kinds of considerations we had to balance when designing a game that was ostensibly for children, but received and

supervised by Baroque music experts: two groups for whom what counts as useful or engaging knowledge may not be the same thing. Our Tafelmusik colleagues suggested Frances, the female character, Frances, should not be shown in the dancing game wearing her traveling costume, which features pants, instead of the more historically accurate corset and broad dress motif of the other three costumes we designed for that character. Here, our ongoing concern with generating non gender-normative character representations in educational games (discussed at length in [5]) came into tension with a perceived need for historical fidelity: women wore dresses to court, and that's that.

### **PLAY-TESTING**

While some divergent conceptions emerged during our design process between the development team and clients regarding the importance of historical fidelity and 'expert' knowledge, particularly in the transformation to an interactive, graphically-driven medium, our play-testing sessions provided a different set of tensions, primarily between the school-based content (housed in the gameshell) and their playing with Baroque music in the mini-games. In these sessions, we invited groups of students, aged 12-14 (150 in total) to play the game, giving them little or no instructions on what to do and/or how to navigate. For some of these sessions (2 out of 6) we created a short worksheet to accompany the game, primarily to call the students' attention to the gameshell, and the information on composers and Baroque instruments housed there. Each of the play sessions was observed by one or more of the authors, and documentation included video, audio and extensive fieldnotes. While the location and context of the sessions differed somewhat (2 were in a school music class, the remaining 4 within a summer camp context) there was no significant difference in the ways in which the students responded to or played with the games. We will therefore discuss the sessions together, though it should be noted that these sessions occurred within an extremely impoverished community in a large city in Canada, and none of the 150 students had ever listened to or encountered Baroque music prior to playing the game. In this section, we focus on two significant aspects we observed during play-testing: the ways in which the players played (or did not) and the ways in which the 'curricular' content on the gameshell map was taken up and navigated by players.

Remarkably, in each of the one-hour play sessions we observed high engagement: affective pleasure (smiles, laughter), excitement, chatter, and the desire to keep playing. Of the 3 mini-games the 2 that were based on popular rhythm games (the inscription game and the dancing game) were most played, and in one of the sessions an active competition was struck between two groups of all boy players as they competed for high scores, calling them out as they finished a level of the game. In one session, a small group of students circumvented the listening aspect of the games by muting their sound and instead played as they

listened (over and over again) to Michael Jackson's "Thriller".

In none of the play-sessions did we observe anyone paying attention to or reading in any way instructions for the game in general, or for navigating the gameshell in particular. This is not particularly remarkable, but that they would not look to instructions even after failing and would instead seek out something more 'playable' is we think significant when thinking through the design of educationally-based games, which typically rely on some kind of instructional set in order to be understood and then played.

The orchestra mini-game, where success requires listening and re-executing elements of a Baroque orchestra, was less popular in the four sessions that were not the music class. The music class played the game much more, in part, we think, because they were already generally familiar with the parts of a modern orchestra. In one of those play-sessions, we observed a student spent over 30 minutes playing and re-playing the orchestra game, intent on "getting it right". He was so absorbed in playing that his teacher (who had been observing and assisting) remarked that he had never seen the student "hold still for so long" and had never (over the entire school year) seen him "so engaged". The teacher was so excited he left the computer-area to pull the student's other teacher out of class to show her how "still" and "engaged" the (diagnosed) "learning disabled" student was.

### **Gameshell Content vs. Play**

While it was not surprising to us that the students instantly recognized the gameshell and its associative content as 'curricular', they did spend considerable time exploring the map, clicking on, listening to and sometimes reading the pop-up bubbles. While, admittedly, this was partly due to the fact that they ignored the instruction set, it did somewhat achieve the Tafelmusik goal of providing a Baroque musical experience to an uneducated audience. Secondly, but no less significantly, when we constructed a very general worksheet to help guide them through the game, we observed players reading the gameshell content in quite a different way than we had intended: they saw it somewhat as justification for the fun that they had playing the games. So when we attached a worksheet to the play-sessions, they were eager to "fill in the blanks", though with highly varying levels of completion.

Most notably, we saw a real gender divide in play-testing sessions involving the worksheet, where the girls worked diligently to 'get the right answers' and they boys half-heartedly worked to semi-completion, resorting to made-up answers when they could not find or could not be bothered to find the content they sought. One boy, for example, wrote that one of the composers died of "cancer" while a girl rightly indicated his cause of death (with some interpretation) as "refusing to get his leg amputated". Despite these differences, however, what was clear is that the content that we so painstakingly agonized over and



disagreed with our client about was not, in the end, at all significant in the context of play. Where it was and could be more significant, is, of course, a music class, which many of our informants noted.

Finally, our play-sessions also revealed that (in the gameshell in particular) players wanted more control over what they were listening to. Indeed, one player commented that the composers we highlighted “probably had more than one famous song.” Suggestions to include more information were somewhat unexpected: one player thought the map of Europe, for instance, would be more useful if there were informational bubbles about specific countries. While these play sessions were limited in scope, they are illustrative, we think, of the tendency – among school-aged children and educators alike – to recognize as ‘educational’ primarily those forms of knowledge most represented and mobilized in schools: text-based, propositionally-oriented content [5, 6, 19].

Afterwards, when asked what someone of their age might learn by playing the mini-games, participants remarked that they communicated “history about the Sun King” and “dancing types of dances” (dancing game), “how different instruments sound” (orchestra game) and “how the music looked” (inscription game). While these remarks cannot be read as a decisive indicator of the game’s success as a learning tool, they advance the possibility, as we have argued elsewhere [4, 5] that educational games should be less concerned with communicating information and more concerned with developing affect - with keeping players pleasurably engaged in a space where educational content is spread across all elements of design (from graphics, to narrative, to, crucially for this game, sound and music).

#### **LUDIC EPISTEMOLOGIES: LEARNING THROUGH PLAY**

Jean Francois Lyotard and Marshall McLuhan, while writing from very different points of view and on different subject matters, both foresaw digital media bringing forth very different ways of knowing. For McLuhan, what those changes were would only become clear as we were “looking through a rearview mirror”, that is when we were further enough away from the change in medium to understand what changes it had wrought epistemologically and ethically [14]. On Lyotard’s view, the technological movement towards computerization brings about a corresponding shift in both the forms and the relative values of knowledge. Following a Marxian distinction between use value and exchange value, Lyotard argues that what and how we know is very different in the “postmodern condition”: knowledge that has worth in and of itself is less valued [12]. Instead, knowledge becomes something that is produced in order that it might be sold. In Lyotard’s words “knowledge is and will be produced in order to be sold, it is and will be consumed in order to be valorized in a new production: in both cases, the goal is exchange” [12].

While we are perhaps not yet able to look in the rear-view mirror of online game media, or even Internet and game

media in general, two important epistemological aspects that enabled us to communicate Baroque music content into the context of an online learning game are noteworthy: the possibility for interactivity – both conceptual and embodied, and the combination of visual and auditory modes of presentation – offering complementary, not redundant, understanding and experience. These two aspects present opportunities not possible in pedagogies built from other media, and have the added bonus of arriving nested in a context already popular with the intended wider (youth) audience.

Furthermore, the conceptual and interactional conventions already present in this context – that of digital games – becomes scaffolding for building an experience of learning that is already familiar and enjoyable. And while their merits as teaching tools have yet to be examined and/or evaluated, all three of the mini-games described above are, we believe, examples of creating a focused learning (as opposed to learning that games already provide; see [17]) of specific content – in our case Baroque music – which takes advantage of well-established design and game mechanics and conventions in order to cultivate new audiences for a rather esoteric cultural form, by exploiting the affordances of what is very much a ‘popular’, mass-cultural medium.

#### **Ludus (Latin): Game, Sport, School**

As has been argued numerous times [6, 15] formal education has, in recent decades and often through the deployment of digital technologies, wholly embraced this Lyotardian conception of education’s having instrumental, not intrinsic value, in its contemporary incarnation as a commodity to be exchanged: for marks, for credentials, for increased opportunities in a globalized ‘knowledge economy’. On this model, the classical notion of knowledge formation as in inherently beneficial, even pleasurable pursuit seems to have very little play – as evidenced by a public education system which, in recent decades in Canada, has made arts education almost obsolete in its move toward standardized testing and a return to “fundamentals.”

In our development of this small-scale Flash game, we have tried to invert this instrumentalist educational economy, by creating a learning resource which has little to no “exchange value” - distributed online for free, it is unauthorized by any formal curriculum, and disconnected from any official ‘credentials’.

By privileging embodied interactive play, and de-privileging propositional ‘information’, we have tried to design an experience which offers players opportunities to simply understand a certain genre of music better, and, we think, enjoy it more. Our game may in this way have little educational ‘exchange value’, but in learning from and borrow heavily upon the kinds of enactive learning accomplished through games like Guitar Hero, Elite Beat Agents, and DDR, we have sought educational value of a different, and indeed itself a ‘classical’ form: a form that

retrieves and resuscitates the very old and very powerful connection between learning and pleasure, and between education and play – which continues to reside in the ‘intrinsically-motivating’ character [7, 19].

#### ACKNOWLEDGEMENTS

We’d like to acknowledge the patronage and generous expertise of the Tafelmusik Baroque Orchestra Society and the work of student designers, programmers and artists: Andrew, Ben, Catherine, Davoud, Peter, and Tahereh.

#### REFERENCES

1. Brown, A. L. “Design experiments: Theoretical and methodological challenges in creating complex intervention in classroom settings,” in *Journal of the Learning Sciences* vol. 2, no. 2 (1991), pp. 141-178.
2. Collins, A. (1992). “Toward a design of science education,” in E. Scanlon and T. O’Shea (eds.), *New directions in educational technology*. Springer-Verlag, Berlin (1992), pp. 15-22.
3. Design-Based Research Collective, The. “Design-based research: an emerging paradigm for educational inquiry,” in *Educational Researcher* vol. 32, no. 1 (2003), pp. 5-8.
4. de Castell, S. and Jenson, J. (2003). “Serious play,” in *Journal of Curriculum Studies*, vol. 35, no. 6 (2003), pp. 649-665.
5. de Castell, S., Jenson, J. and Taylor, N. “When meanings play,” in A. Baba (ed.), *Proceedings of the Digital Games Research Association (DiGRA) Conference* (Tokyo, Japan, September 2007), Japax, pp. 590-600.
6. de Castell, S., Bryson, M. and Jenson, J. “Object lessons: towards an educational theory of technology,” in *First Monday*, vol. 7, no. 1 (2001). Available at [http://www.firstmonday.org/issues/issue7\\_1/castell/](http://www.firstmonday.org/issues/issue7_1/castell/)
7. Huizinga, J. *Homo ludens: a study of the play-element in culture*. Beacon Press, Boston, MA, 1960.
8. Jenson, J. and Taylor, N. (2006). “(D)evaluating pedagogic interactivity: the case of ELSE,” in P. Kommers and G. Richards (eds.), *Proceedings of World Conference on Educational Multimedia, Hypermedia and Telecommunications* (Chesapeake VA, 2006), AACE, pp. 2835-2840.
9. Jenson, J., and Taylor, N. (2007). “Lego storyboard: building digital stories,” in G. Richards (ed.), *Proceedings of the World Conference on E-Learning in Corporate, Government, Health Care, and Higher Education* (Chesapeake VA, 2007), AACE.
10. Kafai, Y. B. “Playing and making games for learning: instructionist and constructionist perspectives for game studies,” in *Games and Culture*, vo. 1, no. 1 (2006), pp. 36-40.
11. Ito, M. “Mobilizing fun in the production and consumption of children’s software,” in *The Annals of the American Academy of Political and Social Science*, vol. 597, no. 1 (2005), pp. 82-102.
12. Lyotard, J.F. (1984). *The postmodern condition: a report on knowledge*. Manchester University, Manchester, 1984.
13. Mateas, M. and Stern, A. “Built it to understand it: ludology meets narratology in game design space,” in S. de Castell and J. Jenson (eds.), *Proceedings of the Digital Games Research Association (DiGRA) Conference* (Vancouver BC, June 2005), Simon Fraser University Press.
14. McLuhan, M. *Understanding media: The extensions of man*. McGraw-Hill, New York, 1964.
15. Noble, D.F. “Digital diploma mills: the automation of higher education,” in *First Monday*, vol. 3, no. 1 (1998). Available at [http://www.firstmonday.org/issues/issue3\\_1/noble/](http://www.firstmonday.org/issues/issue3_1/noble/).
16. Poole, S. (2000). *Trigger happy: videogames and the entertainment revolution*. Arcade, New York, 2000.
17. Prensky, M. *Don’t bother me Mom – I’m learning!: how computer and video games are preparing your kids for 21st century success and how you can help!* Paragon House, St. Paul, MN, 2006.
18. Rieber, L. P. “Seriously considering play: designing interactive learning environments based on the blending of microworlds, simulations, and games,” in *Educational Technology Research and Development*, vo. 44, no. 2 (1996), pp. 43-58.
19. Taylor, N. “Playing by the books: working out the dichotomy between learning and play.” Unpublished Major Research Paper. York University, Toronto, 2002.
20. Truax, B. *Acoustic communication*. Greenwood Press, Santa Barbara CA, 2001.