New Review of Academic Librarianship, 21:129–145, 2015
Published with license by Taylor & Francis
ISSN: 1361-4533 print / 1740-7834 online
DOI: 10.1080/13614533.2015.1043467

Routledge
Taylor & Francis Group

The Protean Challenge of Game Collections at Academic Libraries

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The rise of game development and game studies on university campuses prompts academic libraries to consider how to support teaching and research in this area. This article examines current issues and challenges in the development of game collections at academic libraries. The gaming ecosystem has become more complex and libraries may need to move beyond collections largely based on console video games. This article will advance the discussion by considering emerging issues to support access to the full range of games. The article will use examples from Carleton University Library, Ottawa, which has been developing a game collection since 2008.

KEYWORDS *academic libraries, games, video games*

INTRODUCTION

Academic libraries support the teaching and research needs of the University and must adjust collections and services in response to new developments. This process can push academic libraries to look beyond traditional books and journals; the rise of game development and game studies on university campuses provides a timely example. This article will examine current issues and challenges in the development of game collections at academic

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libraries. Game collections have been discussed by a number of influential articles published in the mid to late 2000s (see Kane, Soehner and Wei 2007; Laskowski and Ward 2009; Smith 2008; Tappeiner and Lyons 2008); at that time the discussion centered on game collections based on console video games, which were then largely new to academic libraries. However, the gaming ecosystem has become more complex in recent years. This article seeks to further the discussion by considering emerging issues in developing game collections. We will use examples from Carleton University Library, Ottawa, Canada, which has been developing a game collection since 2008.

Discussion of Games

Broadly speaking, academic libraries might want to incorporate three types of games into their collections: board games, console games, and PC games. Board games are traditional tabletop games, such as *Monopoly* and *Settlers of Catan*. Console games are video games played on a dedicated gaming console such as the PlayStation or Xbox. PC games are video games played on a personal computer. These last two categories overlap a great deal, but there are significant content and practical differences and hence our discussion separates them.

Board Games

Recent years have seen an explosion in board game publishing. Board games are strikingly diverse in terms of the themes and mechanics they employ; because of the lower costs to bring a board game to market, compared with a computer game, board games can take greater design risks. For aspiring game designers, contact with the density of ideas in a board game collection can be invaluable.

Game development is, in part, about designing game mechanics. Board games are unmatched in their ability to demonstrate the underlying structure of a game: the rules are presented directly to the players, for example, as a short booklet, and can be readily isolated and analyzed. In contrast, it is much more difficult to extract the rules from a game instantiated in software. Furthermore, the rules of a board game must be understood by players, since the players are responsible for adjudicating play; this means that the rules have to be reasonably simple. Computer games are refereed by the computer and can involve extremely complex calculations.

Console Games

Video games published for use on dedicated hardware such as the PS4 and Xbox One make up the majority of the Carleton game collection. Console

games are easy to shelve and circulate: the media are small and portable. High-production-value games dominate. Most console games are so-called AAA titles, with production costs usually in the range of $10–$20 million, and potentially much more: Bungie's recent title *Destiny* was projected to cost up to $140 million to develop. Many library patrons will be primarily interested in borrowing console games, both for academic pursuits and for leisure.

PC Games and a Dedicated Gaming Lab

Personal computers occupy a middle ground between board games and consoles in terms of ease of development and distribution of games. So-called "indie" games, made and published by small "independent" companies, have proliferated; some, like *Minecraft*, have become household names. Indie titles are generally not available on consoles, experiments such as the Xbox Live Arcade notwithstanding.

Indie games share with board games an experimental vibrancy, less commonly seen in the large-scale commercial games available for consoles. Indie games are generally made by small teams or individuals, and can sometimes serve as political or artistic statements, as *Hotline Miami* or *Dear Esther* did. In consequence, indie games are of interest to academics in both game studies and game development: in game studies, because the games embody rich texts to decode, and in game development, because they serve as design examples and aspirational games more plausibly realizable as a student project than are AAA games.

Historically, PC games have suffered from piracy, spurring publishers to encumber their games with ever more intrusive copy protection schemes; such efforts are generally known as digital rights management (DRM). While the media for console games can be loaned and resold, PC games are generally sold on the basis of a non-transferable license agreement. Installing and playing the game can require use of a one-time activation code, or other form of permanently registering the game to its licensee. Under this framework, it is impossible to lend PC games to library patrons: the first borrower would activate the game, rendering it unusable by later borrowers. The ubiquity of DRM would seem to make the standard borrowing model infeasible for PC games. However, other models are possible. Our library has opted to make PC games available through a dedicated gaming lab: patrons cannot borrow games, but can book time on the stations and play available games there.

Other Games—Mobile Games, MMOs

Board, console, and PC games are not the only types of games available. Notably omitted from the list are mobile games (games played on a mo-

TABLE 1 Composition of the Carleton University Library Games Collection as of December 31, 2014

Board games	119
Console video games	550
PC games (available via Steam in the Library's gaming lab)	142

bile device, typically a smartphone). Such games are often free to play; others are paid for by subscription. Mobile games are directly downloaded to the mobile device from the publisher or from a third-party site. The ecosystem around mobile games does not seem amenable to archiving and distributing games through the library. Libraries might also want to support MMOs, "massively multiplayer online" games such as *World of Warcraft*. MMO games represent an important part of the game industry but there are barriers to making these games accessible through the library. Potential legal issues make naive lending problematic; the standard license agreement for MMOs allows only a single user. Further, MMOs are intended to be played by a single user over a period of many weeks, months, or even years; a player's position develops slowly over a long period of time. Although there are no serious technical issues to maintaining a library subscription to an MMO (legal issues are another matter), it is not clear that the library's patrons would benefit from shared, short-term access to a game of this type.

Carleton University Library Game Collection

In Summer 2008 the Library was approached by faculty with a request to purchase games to support courses in game development. A committee was formed and delivered its final report in early 2009, including a request for funding from the University. The committee obtained start-up funding, games were added to the Library's collection profile, and funding for the game collection is now a regular part of the collections budget. Carleton University strategic plans from 2008–18 included emphasis on new digital media and immersive learning such that the environment was conducive to the establishment of the Library's game collection.

Between 2011 and 2013, the Library was extensively renovated which included building the new Discovery Centre (Discovery Centre for

TABLE 2 Total Circulation for Board Games and Console Video Games for the Period May 1, 2013 to April 30, 2014

Board games	521
Console games	1,645

TABLE 3 All-time Top 5 Circulating Board Games as of December 4, 2014

Title	Total checkouts
Small world: it's a world of slaughter after all	46
The game of life	45
Dominion	37
Chess	36
Risk 2210 A.D.: the game of global domination and beyond	36

Undergraduate Research and Engagement 2015) to facilitate collaborative and interactive learning. The new space includes a high-tech nontraditional classroom, a multimedia lab with 18′ × 5′ projector screen, and a gaming lab. Carleton University Library has developed a sizable collection of board games, console games, and PC games which are further described in Tables 1–4 and Figures 1 and 2. The Library crowd-sourced development of the game collection, actively seeking input from faculty, students, and Library staff. Use patterns (see Figures 3 and 4) indicate that circulation of board games and video games is distributed across the collection.

Benefits of Developing a Game Collection

There are a number of significant benefits for developing a game collection for an academic library including its ability to support related programs, its ability to foster innovation in teaching beyond game studies and game development, and increased morale among library staff. We discuss these in subsequent sections.

Support for Faculty Working in Game Development and Game Studies

The main reason to collect games is to support teaching and research in game development and game studies. Game development is the art and science of making games, including both technical and design elements. Students benefit from seeing numerous examples of successful designs, and specific

TABLE 4 All-time Top 5 Circulating Console Games as of December 4, 2014

Title	Platform	Total checkouts
Assassin's creed II	PS3	51
Red dead redemption	PS3	50
Battlefield: bad company 2	PS3	50
Batman: Arkham Asylum	PS3	50
Super Mario galaxy	Wii	50

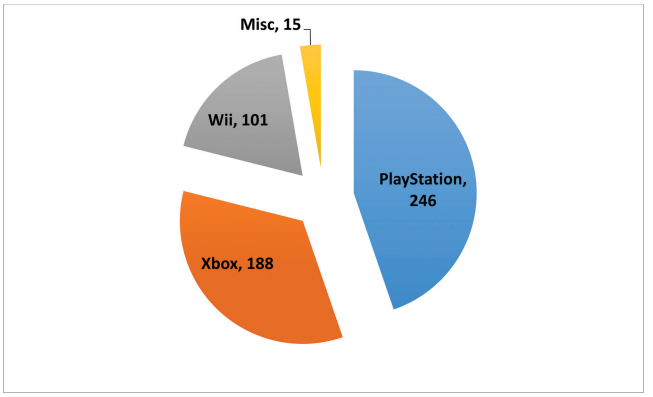

FIGURE 1 Console game collection and titles by platform as of December 31, 2014. The Library collects in 4 platforms: 1) PlayStation (PlayStation, PS2, PS3, PS4, and PlayStation Vita); 2) Xbox (Xbox, Xbox 360, Xbox Kinect, and Xbox One); 3) Wii (Wii and Wii U); and 4) Misc (includes PC games on disc, noncommercial games such as serious games, student-created games, and miscellaneous other games).

games can be presented as exemplars from which effective design patterns can be abstracted. Faculty may wish to propose a "game canon" as a basis for discussion, listing several important and influential games; a game collection in the library can ensure that all students have access to the full canon.[1] Game studies involves treating games as texts to be studied, analogous to film studies or literary studies. As the games themselves are the objects of study, scholars need to have access to the games.

In the years before the Carleton Library began to collect games, faculty working in game studies and game development tried to store and distribute games in their offices and labs. Though ad-hoc practices persist, the Library's collection means that students can access course and research materials on standard terms.

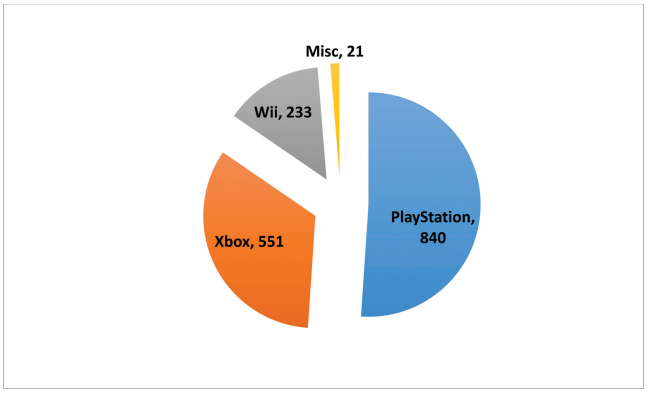

FIGURE 2 Circulation of console game collection by platform (May 1, 2013 to April 30, 2014).

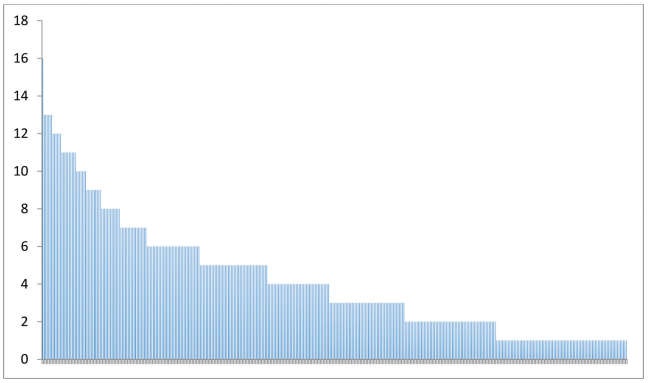

FIGURE 3 Distributed circulation of console games for the period May 1, 2013 to April 30, 2014. Circulation of 407 console games out of 494 total collection as of April 30, 2014.

Support for Teaching and Learning Outside Game Development and Game Studies

The game collection at Carleton University began as a small specialist collection created for game development courses in the School of Computer Science and the School of Information Technology. As the collection and the gaming lab have grown, games are starting to be used by courses across disciplines. This has led to some innovative teaching and learning, discussed in the following paragraphs.

A third year undergraduate course in history, *Video games and simulation for historians*, taught by Dr. Shawn Graham has made frequent use of the Library gaming lab including PC games and *Minecraft* to observe, identify, and create historical thinking in games in the context of digital history.

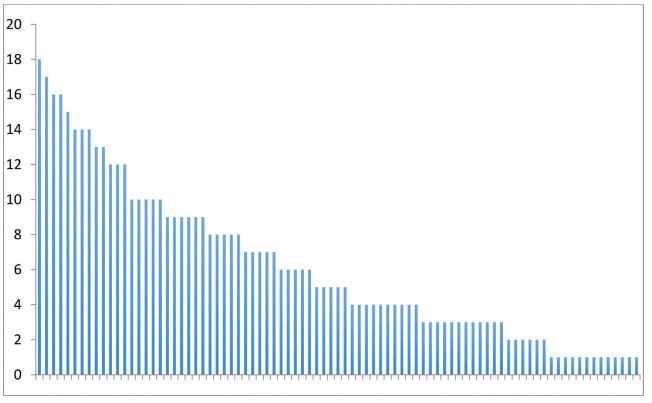

FIGURE 4 Distributed circulation of board games for the period May 1, 2013 to April 30, 2014. Circulation of 85 board games out of 91 total collection as of April 30, 2014.

Gender and gaming, a third year undergraduate course in Women's Studies taught by Dr. Jessica Aldred, examines how digital games, their creators, and the various gamer cultures that surround them have often struggled to create gender and sexuality-inclusive spaces and characters. In order to fully understand this struggle, Dr. Aldred requires students to play and closely analyze the wide range of digital game texts, some of which are emblematic of current limits of representation and inclusion in games, and others which point to more hopeful possibilities for the future.

In the next decade, as new faculty enter universities, they will want to include games in their curricula. Academic libraries need to be prepared for these requests.

The gaming lab has also been utilized at various events which have provided positive publicity for the Library. The most recent was the Library GIS Day (MacOdrum Library 2014) when participants from across campus and the local community experimented with two Oculus Rift headsets to view geographical data in *Minecraft, Euro truck simulator 2* and other games.

The design, set-up and operation of the Library gaming lab has provided a welcome opportunity for Library staff to collaborate with faculty and computing services. Regular meetings with faculty, Library staff and computing services staff facilitate discussion of issues such as purchase and storage of gaming equipment, design and usage of lab space, collection development, workshops and special events to support teaching and learning with games. Collaboration has also expanded to include consultation with the local public library system which has been collecting video games for years. Colleagues at the gaming lab at McMaster University have also shared tips and best practice ideas (McMaster University 2015).

Increased Morale and Teamwork for Library Staff

Another benefit discovered while developing the game collection at Carleton was that it boosted morale and teamwork for Library staff. The game collection, especially the board games, was enthusiastically embraced by Library staff and spawned the creation of the Library games club where Library staff enjoy learning new board games and spending time together in an informal and fun social atmosphere. This same phenomenon has been described by Leeder (2014) at the College of Western Idaho Library which also has a game collection.

Enthusiasm for the game collection has also generated professional benefits for the Library. For example, a team of Library staff presented a "Board game zone" as an "unconference" session at the Ontario Library Association conference in January 2015 to promote the value of games in library collections. Thus, there are advantages to being an early adopter in an emerging field including the development of "human capital" in staff trained to provide an innovative new Library service.

ISSUES AND CHALLENGES

New collections bring challenges for academic libraries. Developing a game collection involves experimentation; not everything will work smoothly. Some common challenges and pitfalls include threats of censorship; internal resistance from within the library; the need for a coherent collection policy aware of the diversity of games; and technical and logistical issues around purchasing, preserving, and circulating games.

Censorship of Video Games

Censorship of video games is an ongoing issue in academic libraries, which operate in a campus culture sensitive to issues of gender and violence (Laskowski and Ward 2009, 269). Video games can produce strong reactions; people argue that video games depict graphic violence and promote negative stereotypes of women, and hence do not belong in a university library. Carleton University Library had a direct experience with censorship in Fall 2011 when the Library added *Rage* to the collection. *Rage* was the Library's 300th game; the milestone was advertised on the Library website to promote the growth of the video game collection. Within days, the Library received a number of complaints about the game from faculty who asked that *Rage* be removed from the collection. Two faculty members complained that the game exposed students to dangerous and insidious representations of militaristic violence and aggressive masculinity. One faculty member further added they were raising concerns as part of a wider struggle to make the university a safe space for everyone. They had also watched the trailer for *Rage* and found it chilling and disturbing.

Complaints were forwarded to the Associate University Librarian (Collections) who reviewed the concerns and corresponded with the complainants. The issue produced vigorous discussion. The title had been purchased for academic reasons: game studies researchers were interested because *Rage* marked the return of John Carmack, maker of *DOOM,* to game development; game development students were interested to see the effectiveness of the id Tech 5 engine and its new technology for streaming very-high-resolution textures (see Figure 5). Requests to remove the title were declined. The Library responded that while the game contains images which may be considered offensive by some, the University relies on the professional judgment of library subject specialists and faculty to acquire library materials which support teaching and research. Furthermore, academic libraries cannot select or censor materials based on potential to cause offence.

The experience prompted the Library to review its challenged materials policy, which had been languishing as an internal Library document. The policy was reviewed, amended, passed through the relevant library committees,

FIGURE 5 Screenshot from *Rage* (PC version). © David Mould. Reproduced by permission of David Mould. Permission to reuse must be obtained from the rightsholder.

and is now posted in the Library website (MacOdrum Library 2015). Furthermore, the experience strengthened the Library's commitment to academic freedom on campus and has resulted in an article in Canada's national *Freedom to Read Week* magazine for 2015 (Attridge-Bufton and Jones 2014).

Censorship will continue to be an issue for academic libraries collecting video games. Libraries require institutional support and collections policies to effectively address challenges. Without these measures in place, libraries risk removal of titles and further acquisitions could be slowed or halted. Under such circumstances, it would be difficult to effectively build a collection or

FIGURE 6 Examples of student-created games. *Nautilus* by Joshua DeGagne et al. and *Endless Nebula* by Terrence Anderson and William Fleurant from the School of Computer Science, Carleton University. © David Mould. Reproduced by permission of David Mould. Permission to reuse must be obtained from the rightsholder.

a working relationship with faculty. The heated debate about video games will continue, but it should not undermine the work of academic libraries to support teaching and research in this field.

Internal Resistance

Academic libraries can also face internal resistance to games from library staff who do not see the value of games in the collections or are unaware of how games are used in research and teaching. Resistance can manifest in many forms. At Carleton University Library, issues were raised about the cost of games and the content of Mature rated console games. The most serious flashpoint for dissent was the issue of game accessories. *MarioKart* steering wheels, Wii balance boards, *Dance, Dance Revolution* mats, and *Rock Band* instruments became a barrier to collecting games when claims were made that the accessories were too cumbersome to store, shelve, and circulate. Additional concerns were raised that gaming accessories were unhygienic and should not be circulated. Debate continued for a number of months and culminated at a Library Collections Committee meeting in Spring 2013, which included a letter of support from four faculty working in game development. The Committee decided to fully support the game collection: sidelining or removing Library materials bought to support courses would create a worrying precedent. Despite the Library holding an information meeting for all staff about the use of games in university courses and thorough discussion of games in the Library Collections Committee, it appears that some resistance was unavoidable. Again, an updated challenged materials policy and support from senior management can help address issues as soon as they start. Also, ongoing Library events to promote gaming can educate staff on how games are used in research and teaching and can help reassure Library staff that these non-traditional materials do indeed belong in a university library.

Collection Development Policy

Gaming is a diverse field with a wide variety of purchasing options and there are many issues to consider when developing a collection development policy for games. Decisions need to be made at the outset so the collection and budget are not spread too thin. Which types of games should the collection include? Board games, console games, and PC games are not the only types of games available. Issues around collecting other games including mobile games and MMOs were discussed earlier.

Console Games

The case for collecting console games is simple: they are easy to circulate and have high production values, making them the most popular choice for

libraries; that said, there are a few pitfalls with collecting console games. Console games run on dedicated hardware, and a given item can only be used by patrons with access to the corresponding console. It is possible to improve access by loaning consoles as well as games; Carleton has so far eschewed this path, but other libraries might decide differently. Even granting that many or most patrons will have a console of some type, the library must decide on a game-by-game basis which consoles to support. Some games are available only on a single console type (so-called "exclusive" games, such as *The Last of Us*). Others are available on multiple consoles; one of the library's earliest acquisitions, *Bully* (2006), was available on Xbox 360, PlayStation 2, and Nintendo Wii. With limited funds, the library must make tradeoffs between supporting multiple consoles for a single game vs. purchasing more new titles. The recent entry of the PS4 and Xbox One complicate matters: the newer consoles represent better technology, but do not yet have a large install base, so games purchased for these consoles will not be usable by many patrons yet.

Ensuring Collection Diversity

As discussed, there are valid reasons to expand a game collection beyond only console games. To simplify acquisition and installation of the PC games, libraries can use the digital distribution service Steam. Steam has an enormous catalog of games (approximately 4200 as of January 2015) and provides a single point of contact for downloading and installing games. Carleton has used Steam to acquire over 140 games; while Steam sells AAA games as well, our approximate policy is to get AAA games on console, and use Steam to get games not available on consoles.

Digital Rights Management (DRM) and Downloadable Content (DLC)

DRM and DLC will be part of the evolution of games and academic libraries should pause to consider whether and how they can support these developments. Even console games are affected. For example, the game *NBA2K14* "super fan pack" (containing *NBA2K14* for both Xbox One and Xbox 360) is sold in console game packaging but does not contain the game, which must be downloaded from Xbox Live. Downloaded games are not transferable, and, therefore, games distributed in this manner are unsuitable for circulation; in our case, we installed it in the Library gaming lab. The potential for future developments around DRM and DLC suggests that academic libraries may need to consider offering the services of a gaming lab to support access to a full range of games. Labs have not traditionally been provided by academic libraries; we will revisit this issue later.

Preservation

Finally, libraries have to consider challenges of preservation. Gaming hardware changes, with newer consoles incompatible with older ones: the PS4 does not run PS3 games, for example. Overreliance on Steam is risky; there is no guarantee that the service is going to be around forever, and if Steam is discontinued, games purchased through Steam may not remain available. While Steam is the largest digital distributor, alternatives such as GOG (Good Old Games 2015) also provide digital delivery; GOG has a much smaller catalog, but has advantages such as providing DRM-free downloads. Libraries should consider issues around the preservation of games as they would with any other digital object. Software emulation of older hardware is a possibility; projects such as MAME (the Multiple Arcade Machine Emulator) allow games from old consoles and arcade cabinets to be played on modern PCs. Efforts at open access preservation need not be linked with any particular library. For example, Internet Archive has recently added "Internet Arcade" with over 600 free-to-play browser-ready arcade games from the 1970s to 1990 emulated in JSMAME (Internet Archive 2015).

The Library also actively solicits and collects student-created games both for collection development and preservation of student-created research. Student-created games are currently stored on disc and efforts are underway to add these games to the Library's institutional repository on a consistent basis.

Traditional Library Functions with a Non-traditional Library Collection

Video games and board games are non-traditional materials for an academic library; customary library functions such as acquisitions, cataloguing, processing, shelving, and circulation can present challenges. This topic has already been thoroughly discussed in earlier articles (see Robson and Durkee 2012; Kane, Soehner and Wei 2007). However, there are a number of issues newly arising from the continued growth and diversity of game collections.

It can be difficult to find library suppliers who handle games effectively. Fortunately, purchasing board games and video games from amazon.ca has worked very well at Carleton, supplemented with purchases from specialist websites (See Boardgames4us 2015) and local stores. In addition, the Library has established a credit card for the Library gaming lab, needed to purchase Xbox Live Gold and PlayStation Plus subscriptions to access DLC for an increasing number of video games. The credit card can also purchase Wii U games from the Nintendo eStore.

With an increasing number of libraries collecting video games, it is becoming easier to find MARC records for copy cataloguing. It has been difficult for libraries to find information on cataloguing video games with Resource Description and Access (RDA).[2] However, the Online Audiovisual

Catalogers Inc., Cataloguing Policy Committee, Video Games Best Practices Task Force is currently working on a best practices guide for cataloging video games.[3] In November 2014, the Task Force also submitted a proposal to the Library of Congress for a new RDA relationship designator for video games, "video game developer."

Processing, shelving, and circulating console games has been discussed in the literature (see Bridges, Hussong, and Mellinger 2008) and can be handled in a similar manner to DVDs. Security is an additional concern for console games as these titles are frequently in high demand. Console games often have a high rate of missing items which are billed to the patron. Libraries can conduct regular reviews of missing and billed titles to keep track of the collection and order replacements when necessary to keep the material accessible for students and faculty. Libraries can also review policies and fees for lost material: libraries with a low flat fee for replacements can find they are acting as a de facto game distribution service as students may prefer to pay the replacement fee instead of purchasing their own copy. Older console games may also increase in value; replacement fees should cover the cost of finding new copies. As library collections of console games mature, replacing console game titles is an ongoing concern. It is often difficult to find older titles. In some cases, the original game had bugs or fixes which have academic value for game development students and it is a loss for the library if a replacement copy cannot replicate this content. Sometimes, secondhand markets are the only recourse. Despite security issues, libraries should endeavor to make console games browsable and accessible. Generally, an empty container on the shelf with the disc and manual behind a service desk could be considered best practice.

Board games provide their own set of challenges. They can be time-consuming to prepare for circulation, be physically awkward to shelve, and missing pieces can be an issue as contents are too numerous to be checked when board games are returned to the Library. Often libraries do not know there is something missing from a board game until a patron reports it. Fortunately, libraries can order replacement copies; old board games are easier to find than old console games.

Chadwell (2011, 199) notes the concern many libraries have regarding the additional workload that games place on technical services staff. She suggests that although efficiency is a valid concern "such arguments may be specious if not shortsighted." A significant amount of work has been outsourced from technical services departments in academic libraries including shelf ready cataloguing and demand driven acquisition programs[4] (see for example Davis, Jin, Neely, and Rykse 2012). "So theoretically, the transformation of collections services means that staff can be available to work on specialized collections programs and services that might satisfy user's de-

mands better – programs and services like the introduction of games and gaming into the academic library" (Chadwell 2011, 199).

Gaming Lab in the Context of Academic Library

University libraries started collecting video games in the late 1990s and 2000s, building collections largely based on console games. The gaming ecosystem has become more complex in recent years and it is likely that an academic library collecting video games will, at some point, consider offering a gaming lab to support access to the full range of video games (see also Robson and Durkee 2012, 83). Setting up a gaming lab in a library setting is a complex project; both practical and philosophical issues should be considered.

Practical

The staffing requirements for a gaming lab should not be underestimated. The service cannot run effectively without qualified computing services staff being on hand to resolve technical problems and keep the equipment functioning and secure. Additional staff support is required to handle room bookings, create documentation such as acceptable use policies, provide instructions for using the equipment, monitor the room, and handle inappropriate use. Without dedicated and highly skilled staff, the services provided in a library gaming lab will not be accessible to library patrons.

Philosophical

Offering a gaming lab in a library setting requires embracing the idea of lab as a dynamic space for learning and experimentation, not a static provision of service. Implicit in this idea is the concept of risk: game play cannot be controlled, may get rowdy or be offensive to some people or (as previously mentioned) despite ongoing maintenance may not always work as intended. Despite the expense and demands involved, a gaming lab provides the venue for some remarkable learning opportunities for students, examples of which were discussed earlier in the article.

CONCLUSION

Games are non-traditional resources for an academic library collection and controversy usually accompanies the purchase of this material. However, the role of an academic library is to support the teaching and research at the university. Enrolment in game development and game studies courses

continues to rise and supporting these fields, although challenging, can have numerous benefits.

As discussed, challenges include stretching a finite library budget; unfavorable reactions from faculty and library staff who may not understand how games are utilized in course curricula; collection development in a complex gaming ecosystem with a myriad of purchasing options; and challenges such as DLC, DRM, and preservation.

However challenging it is to support a new and specialized collection, doing so opens academic libraries to a wealth of new opportunities. The library is placed at the leading edge of a current development in higher education, and is seen as proactive with an elevated profile in the university community. New collections also provide marketing opportunities and increased interest in library services. These developments also provide favorable circumstances for the library to collaborate in teaching and research by supporting faculty and students in emerging disciplines with new professional opportunities for library staff to provide an innovative service. Finally, developing a new and specialized collection such as games involves an element of risk, which is unfamiliar territory for many academic libraries, but it is accompanied by a welcome opportunity to reinvigorate library operations.

NOTES

1. In Fall 2014, there were a total of 444 full time students registered in game development courses at Carleton University in the School of Computer Science and the School of Information Technology. See Figure 6 for examples of student-created games.

2. Resource Description and Access (RDA) is the current standard for descriptive library cataloguing adopted by national libraries including the Library of Congress and Library and Archives Canada from April 2013. See http://www.rdatoolkit.org

3. Online Audiovisual Catalogers Inc. (OLAC), Cataloguing Policy Committee, Video Games Best Practices Task Force. "Best practices for cataloging video games using RDA and MARC 21," to be released in 2015. For further information see the OLAC website http://www.olacinc.org/drupal/

4. Demand driven acquisition (DDA) refers to the purchase of library materials based on selection by patrons in the catalogue.

REFERENCES

Attridge-Bufton, Martha, and Wayne Jones. "Censorship and the Academic Library: Sex, Violence and Video Games." *Freedom to Read Week* 31 (2015): 26–27. Web. 26 Apr. 2015. <http://www.freedomtoread.ca/wordpress/wp-content/uploads/kit2015.pdf>.

Boardgames4us: delivering fun back to your home. Web. 8 Jan. 2015. <www.boardgames4us.ca>.

Bridges, Laurie, Uta Hussong, and Margaret Mellinger. *Circulating Video Game Collections in the Academic Library*. Corvallis, OR: Oregon State University Libraries, 2008. Web. 8 Jan. 2015. < http://ir.library.oregonstate.edu/xmlui/handle/1957/17111>.

Chadwell, Faye A. "What's Next for Collection Management and Managers? Games and Gaming in Academic Libraries." *Collection Management* 36.4 (2011): 198–202. Print.

Davis, Kate, Lei Jin, Colleen Neely, and Harriet Rykse. "Shared Patron-driven Acquisition within a Consortium: The OCUL PDA Pilot." *Serials Review* 38.3 (2012): 183–187. Print.

Discovery Centre for Undergraduate Research and Engagement. Carleton University. Web. 7 Jan. 2015. <http://carleton.ca/discoverycentre>.

Good Old Games. Web. 7 Jan. 2015. <http://www.gog.com>.

Internet Archive. Internet Arcade. Web. 7 Jan. 2015. <https://archive.org/details/internetarcade>.

Kane, Danielle, Catherine Soehner, and Wei Wei. "Building a Collection of Video Games in Support of a Newly Created Degree Program at the University of California, Santa Cruz." *Science & Technology Libraries* 27.4 (2007): 77–87. Print.

Laskowski, Mary, and David Ward. "Building Next Generation Video Game Collections in Academic Libraries." *Journal of Academic Librarianship* 35.3 (2009): 267–273. Print.

Leeder, Kim. "The Play Time Manifesto: Why Having Fun Makes Us Better Workers." *Journal of Library Administration* 54.7 (2014): 620–628. Print.

MacOdrum Library, Carleton University, Challenged Materials in the Library Policy. Web. 7 Jan. 2015. <https://www.library.carleton.ca/about/policies/challenged-materials-library-policy>.

MacOdrum Library. Carleton University. GIS Day at Carleton University, November 19, 2014. Web. 7 Jan., 2015. <https://www.library.carleton.ca/gis-day>

McMaster University. Lyons New Media Centre. Web. 9 Jan. 2015. <http://library.mcmaster.ca/lyons>

Online Audiovisual Catalogers Inc. (OLAC). Web. 9 Jan. 2015. <http://www.olacinc.org/drupal/>.

Robson, Diane, and Patrick Durkee. "New Directions for Academic Video Game Collections: Strategies for Acquiring, Supporting and Managing Online Materials." *Journal of Academic Librarianship* 38.2 (2012): 79–84. Print.

Smith, Brena. "Twenty First Century Game Studies in the Academy: Libraries and an Emerging Discipline." *Reference Services Review* 36.2 (2008): 205–220. Print.

Tappeiner, Elizabeth, and Catherine Lyons. "Selection Criteria for Academic Video Game Collections." *Collection Building* 27.3 (2008): 121–125. Print.