

## **Advances in Academic Video Game Collections**

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### **Abstract**

As mass media and entertainment industries continue to undergo rapid change to keep ahead of trends and consumer demands, libraries must evolve and change along with them to manage these collections. This article will include a look at the UNT Media Library's earlier predictions about their video game and console collection; how practices have changed and will continue to change to support the next ten years of growth; the evolution of outreach to support the growing interest in video games; and the transformation of space to support games on a large university campus.

**Keywords:** video games, virtual reality, academic libraries

### **Introduction**

Mass media and entertainment industries continue to undergo rapid change to keep ahead of trends and consumer demands. Libraries that house materials related to these industries must be prepared to respond to this change as they develop policies and processes related to these collections. The University of North Texas (UNT) Media Library is one of these libraries; taking on the challenges and forging a path for others to follow as they manage a large game collection in support of recreation and research related to play.

In 2009, the UNT Media Library began collecting video games in support of education, engagement, and recreation. In 2012, the growth of the collection led to a formal plan created with the assumption that video games and gaming platforms will experience rapid transformation over the next decade (Author name and date redacted). This assumption was accurate. As video games have transformed, so, too, has the UNT Media Library, with a goal of staying abreast of new technology trends in software and hardware to support university goals. This article will discuss how the Library developed a video game collection to support student retention, student recreation, and classroom instruction. The article also will explain how the Library successfully met challenges involved in collection development, related technology, space needs, and the challenges it sees ahead.

### **Literature review**

This review explores key aspects of video game collections in academic libraries. It covers collection development, library instruction, outreach, cataloging, assessment, gaming spaces, and virtual and augmented reality. To keep the scope of the review manageable, it is limited primarily to publications issued between 2012 and 2019.

#### **Collection Development**

The goals of the video game collection should determine its content. One goal may be to support game design and game development curricula (Nicholson, 2013, Miller, 2014). In some settings, library support of video game design programs also includes establishing video game

archives (Wood & Carter, 2018; Panuncial, 2019). In addition, video game collections may be curated to support educational needs in other disciplines, such as history, where video game simulations are particularly effective in supplementing classroom instruction (Cross, Mould, & Smith, 2015). Other purposes of game collections may be to support e-sports teams, student gaming groups, student recreation, and library outreach activities (Nicholson, 2013).

A detailed collection development policy can be used to guide video game collection acquisitions decisions (Ferguson, 2016). The policy may state the purpose of the collection, the scope of the games and hardware collected, and areas of specific focus (University of Michigan Library, 2018). The collection development policy also may specify how the library should respond to censorship challenges (Cross et al., 2015).

Selection criteria for video games should include educational value, content, cultural and historical value, and technology issues (Tappeiner & Lyons, 2008). A flexible collection plan is needed because of the constantly evolving nature of video game technology, digital rights management and purchasing arrangements (Robson, Parks, & Miller, 2017; Robson & Durkee, 2012).

Recommendations for video game purchases may come from a variety of sources. In many cases, library staff members are responsible for video game collection development. At the University of Oregon, an advisory committee manages selection decisions (Harlan, Cloo, Murray, Smith, & Zeidman-Karpinski, 2017). Team members keep up with new games by reading video game publications and attending gaming conventions. Other sources of recommendations include teaching faculty members (Ferguson, 2016) and gamers (Buchanan & Vanden Elzen, 2012).

#### Library Instruction

Video games are a good fit for library instruction for several reasons (Margino, 2013). They enable students to participate in activities, receive immediate feedback, and learn from their errors. Instructors also benefit from video games that provide information about student learning because they can use this feedback to increase the effectiveness of their instruction (Broussard, 2014).

The process of designing library instruction video games includes defining objectives and implementing an iterative cycle of prototyping, user testing, deployment and assessment (Felker, 2014). Player motivation is an essential consideration, given that most educational games fail because they are not perceived to be enjoyable. Felker's (2014, p. 23) advice is: "Locate the fun in your game early and identify the reasons why people will want to play." The creation and implementation of a library instruction video game can be a complicated process, as described in the case study about a "Choose Your Own Adventure" style game created for a semester-long information literacy course (Sullivan and Critten, 2014).

#### Outreach

Video games are the focus of many academic library outreach initiatives. Because games encourage social activity, they foster student engagement in the university community and help students with similar interests to develop relationships (Vanden Elzen & Roush, 2013). Furthermore, gaming events can attract students who might not visit the library otherwise and allow them to see libraries and librarians in a new light (Blodgett & Bremer, 2014).

Successful gaming events require careful planning. Vanden Elzen and Roush (2013) have provided detailed information on organizing gaming events, including timing, equipment, space, marketing, partnerships with student organizations, and participant surveys. Additional practical advice for planning gaming events has been offered by Blodgett and Bremer (2014).

Library orientation activities may feature video games focusing on library resources. For example, librarians at the University of North Dakota (UND) Libraries used the Information Literacy Game at two campus wellness fairs (Martin & Martin, 2015). UND Librarians customized this web-based trivia game, created at the University of North Carolina Greensboro, for their setting. Another example of an orientation activity concerned librarians at the University of California-Merced who developed a video game using the mobile app SCVNGR, a location-based game platform (McMunn-Tetangco, 2013). They used this game during a student orientation week to familiarize students with library resources.

Open gaming events can be integrated into university orientation activities. For example, the Mudd Library at Lawrence University hosted a gaming day for students during every welcome week (Vanden Elzen & Roush, 2013). Similarly, University of Minnesota Morris library staff members organized a welcome week event incorporating video games and tabletop games (Blodgett & Bremer, 2014).

Partnerships with other groups can increase awareness and participation in gaming events. For example, Georgian Court University librarians partnered with student services on their campus to market their gaming events and create a university gamers' club (Donnelly & Herbert, 2017). They also partnered with a local game store to borrow consoles and video games for a gaming event. Similarly, librarians at the University of Minnesota Morris partnered with residence halls, the International Students Association, intramural organizations and a gaming club to market their gaming events (Blodgett & Bremer, 2014). They also established a relationship with a local gaming store which contributed tournament prizes and co-sponsored library gaming events.

Video game collection outreach is not limited to open gaming events and game tournaments. Libraries have held open house events to introduce instructors to library video game collections and to explain how they can be integrated into instruction (Buchanan, 2012). Other strategies used to highlight game collections include creating subject guides, making social media posts, hosting presentations by game designers, showing films based on video games, and producing podcasts (Buchanan, 2012; Enis, 2019). In addition, library displays showcasing materials related to games may pique the interest of gamers visiting the library (Boyle, 2018).

### Cataloging

Librarians can increase access to video games through cataloging. Historically, cataloging codes "have struggled to keep up and to find adequate ways of representing these materials" (De Groat, 2015, p. 135). However, the publication of *Best Practices for Cataloging Video Games Using RDA and MARC21* (Online Audiovisual Catalogers, Inc., 2018), represents a major advancement in this area.

Genre terms can be used to enhance access to catalog records for video games. For example, Lee, Tennis, Clarke and Carpenter (2013) developed a metadata schema for the elements of video game

style, plot, theme, setting, mood and genre. Another source of genre terms for video games is the *Langsdale Game Genre Headings* (Langsdale Library, 2015). Perhaps the most far-reaching initiative in this area is the *OLAC Video Game Vocabulary* which includes sixty-six genre terms and guidelines for their application (Online Audiovisual Catalogers, Inc., 2019).

## Assessment

Brown (2014) has provided several reasons for assessing video games in libraries. First, librarians should be able to provide evidence to prove that video games and gaming programs have educational value. Furthermore, assessment results can be shared with current and potential stakeholders to stress the value of the gaming program in collaborative and educational efforts.

Gaming events have been evaluated with formal and informal assessment methods. Online surveys have been used to gather feedback about event scheduling and suggestions for games to include at forthcoming events (Vanden Elzen & Roush, 2013). Surveys also have been used to seek information about student use of library resources, game event marketing strategies, and student demographic information (Donnelly & Herbert, 2017). Less formal assessment methods include collecting usage statistics and conversing with students to gather their feedback (Bishoff, Farrell, & Neeser, 2015; Donnelly & Herbert, 2017; Martin & Martin, 2015).

Assessment also has been used to evaluate information literacy instruction games. For example, librarians at the University of West Georgia used a qualitative survey to assess the effectiveness of a game created for a semester-long information literacy course (Sullivan & Critten, 2014).

Another use of assessment is to investigate the needs of faculty, staff and students whose work involves gaming technology. Librarians at the University of Minnesota conducted semi-structured interviews with video game scholars to assess their technology and information needs, and to determine how the library might meet these needs (Farrell, Neeser, & Bishoff, 2017).

## Space Considerations

Space is an important factor in videogame outreach efforts. Anticipated crowd size, noise control, lighting, and power supply must be taken into consideration when temporarily repurposing spaces for gaming events (Vanden Elzen & Roush, 2013). Some libraries may have the resources to create more permanent gaming spaces to attract students to the library on a regular basis. Gaming labs have been designed to support a variety of purposes, including e-sports, virtual reality, and video game production (Inklebarger, 2018; Enis, 2019). For optimal operation, gaming labs must include staff to supervise users as well as to manage user instruction, technical support, and scheduling. (Cross et al., 2015).

## Virtual and Augmented Reality

Virtual and augmented reality (VAR) adoption is a growing trend in academic libraries, according to a recent survey by Pope (2018). VAR applications in academic libraries range from library orientation to support for classroom instruction in a variety of disciplines (Battles, 2014; Lessick & Kraft, 2017; Van Arnhem, Elliott, & Rose, 2018; Varnum, 2019). Developing a VAR program in a library involves many key considerations, including budgeting, equipment selection and maintenance, software

applications, staff and user training, space planning, and legal implications (Pope, 2018; Varnum, 2019).

## Conclusion

Continuous change is a recurring theme in the literature on videogame collections in academic libraries. Change is ubiquitous in video game design, gaming technology, purchasing arrangements, and digital rights management. Furthermore, the opportunities to use games to support education and recreation needs on campus are constantly evolving and expanding. Similarly, change is a major theme in this case study about a large academic library video game collection which has kept pace with innovations while expanding its support for the gaming needs of a dynamic university community.

## Video Games in an Academic Library

The setting for this case study is the University of North Texas Media Library. UNT is the largest public university in the Dallas-Fort Worth area with an enrollment of over 39,000 students. The UNT Libraries' holdings include over six million print and digital items housed in six facilities. The UNT Media Library includes the Libraries' non-print audiovisual and game collections.

The UNT Media Library game space and collection have grown from only two console stations, three circulating consoles, and a handful of video games in 2009 to a vibrant game space with access to a growing collection of games in all formats, twenty-eight gaming PCs, eleven console stations, and space for tabletop play and study in 2020. Current gaming devices include modern consoles, retro consoles, and virtual reality devices. The game collection includes modern and retro video games, tabletop games (board, card, and roleplaying), and escape rooms.

## Content and Access

All library collections are a balance between content and access. The content of the Library's video game collection is influenced by the goals of supporting the curriculum, student retention and classroom instruction. Curation of the video game collection is affected by changes in the video game industry and the lack of institutional game licensing for libraries.

Over the last ten years, the video game industry has grown by adding new devices, types of content, and styles of gameplay. The rapid state of change in electronic media with new content formats available every three to five years creates a continual transformation as the new replaces the old. The UNT Library video game collection development policy reflects this transformation with a continued focus on purchasing contemporary games in all genres and formats. An additional goal of maintaining older formats and building a retro collection has been added to the policy in support of scholarly research. The collection reflects a broad spectrum of video game history and play.

The curriculum goals of providing a collection to support students and faculty interested in research have not changed over the past ten years, but the types of courses it supports have. In 2009, curriculum needs centered around game design programs in the UNT Laboratory for Recreational Computing (LARC), a class on art and design of the computer game, and a class on video game theory, design, and culture. (Journals and books for these subjects were always a part of the library collection, but not the actual video games or equipment.) In 2020, this growing collection of resources provides faculty the opportunity to develop new classes in the field as well as use games to enhance student learning in

other disciplines. The collection now supports classes in journalism, music composition, experimental art, communications, history, and linguistics in addition to supporting computer game design in LARC and a new multidisciplinary Game Studies and Game Design degree in the College of Liberal Arts and Social Sciences.

Engaging students on campus in order to support retention means that recreational play continues to be a focus for collection development. Research shows that students often come to the library to socialize (May & Swabey, 2015). This third space, a space beyond work (class) or home, is a gap that a library can fill with campus facility use related to retention (Montgomery & Miller, 2011). This collection provides a recreational outlet for individual students, and support for student groups, Student Affairs, Residence Life, and intramural esports.

In 2009, the Library's specific goal was to collect top-selling games, massively multiplayer online games (MMOs), independent "indie" games, artistic games, and "serious" or educational games and equipment in support of research and recreation. The goal of collecting top-selling console video games was easily met by simply collecting current top-selling games in a physical format (cartridge, CD-ROM, or Blu-ray disc). Other content is harder to provide because of the continued shift to digital-only access and permanence.

From 2009 to 2017, access to content flipped from a physical format, 80% in 2009, to a digital only format, 83% in 2017 (Statista, 2018). The shift from physical to digital content means that libraries no longer own this content; they rent it. Although libraries already deal with digital-only content curated for library use, game platforms often do not consider library needs in their licensing or consider marketing to library needs. This makes it difficult to navigate this process and provide access. Game platform licenses in 2020 are in the same place that they were in 2009 with limited or no institutional licensing available for libraries.

Because of the move to born digital single-use only licensing, providing access to a robust physical collection of indie and artistic games has not been fully achieved. The licensing for most online game service sites with access to some of these games such as Steam, Nintendo Network, Xbox Live, and PlayStation Network, restricts usage to individuals or their families (Valve, 2019). Libraries can request a free Steam PC Café license that allows use of the platform for individual play of user purchased content or pay for a commercial Steam PC Café license that allows multiple users (Valve, 2020) which allows some access but not necessarily to the needed titles.

Educational, applied or "serious" games also suffer from a lack of a physical format as well as the lack of aggregated online services or spaces for easy access. The stability of access and the end of the Flash Plugin support in 2020 could be the demise of many older titles in this genre (Microsoft, 2019). Adobe Flash, launched in 1996, was an easy to use tool with near-universal access that led to thousands of free games, but security issues became too great to continue its support. There is some hope in that many Flash aggregator sites are moving popular content to HTML 5, but there will be some loss of older games. (Carpenter, 2020) The Archive Team, a volunteer organization working to save digital history, is archiving Flash content to the site [Flashpoint](#) (Kidwell, 2018). This site, managed by Ben Latimore, includes more than "52,000 games and 4,900 animations running on 17 different platforms" (BlueMaxima.org, n.d.).

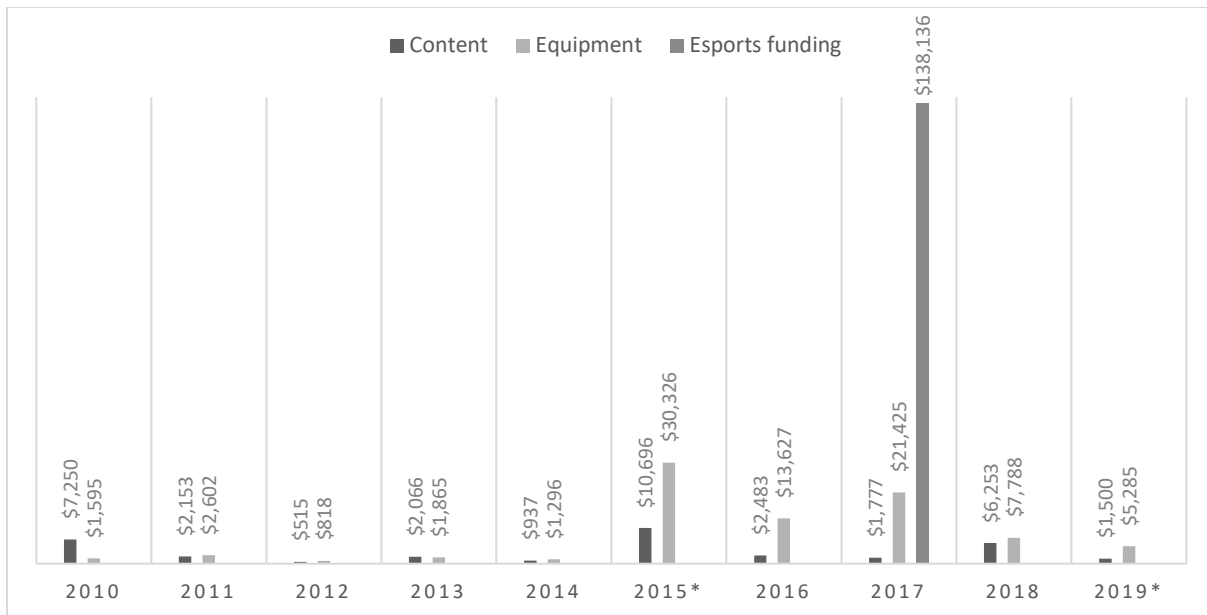
In 2009, the Media Library curated a collection of educational and serious browser-based game links into a library guide to facilitate finding these games but there was minimal use of this content. Currently, the Library believes that curating collections of these browser-based games to meet general user needs is not a time efficient task. Links to archives of this content are provided in a library guide and content is curated if a request is made to support specific coursework.

Occasionally, popular indie, artistic, or educational games are released in a physical format as limited editions that can be purchased and added to the collection. Tracking these titles requires vigilance but the outcome is generally worth it.

Access to library-owned online multiplayer games, which includes MMOs, has also been hard to achieve because of licensing issues. These games continue to grow with new ways to access content through subscription-based networks and the rise of the eSports industry (Statista, 2019). The Library has developed new ways to help provide access to online multiplayer games by supporting access to online digital-only play on library equipment with a dedicated gigabit network link attached to the campus fiber-optic network. Each Library PC includes the basic software product for Steam, Blizzard, Epic Games, Origins, and several other services approved for use through the UNT Office of General Counsel-for patrons to access their own digital content. Consoles allow patrons to play physical discs (personal or from the library collection) or to go online to play their own digital content. Low-latency, easy access, and a welcoming space encourages patrons to come play together even though they must use their own content.

This move toward creating a space for play led to collaborations with student organizations around gaming, which eventually led to a collaboration with Student Affairs to support university intramural and varsity esports teams. Esports has had an impact on gaming both in play and in viewership of games. Esports is competitive play of video games. This play can be professional and is often broadcast before live audiences. (eSports Definition, 2012) It is predicted that the esports audience will grow to 297 million frequent viewers and 347 million occasional viewers in 2022 (Statista, 2018). This industry growth in addition to a new campus initiative to financially support an official collegiate esports team led to the Library's transformation into a full-fledged gaming space in 2018 and a provided a growth spurt for the collection.

Although collection development and the types of games the Library hoped to collect did not turn out how the Library envisioned them in 2009 or even in 2012, the collection has grown immensely.



\*Strategic funding granted to enhance collection

Table 1. Video Game Collection Expenditures by Fiscal Year

Support from administration, academic departments, and Student Affairs along with access to a budget and occasional strategic funding has led to a robust collection of over 1200 video games across all game genres and the equipment to play them. Expenditures by fiscal year are presented in Table 1.

The Library spent about \$2200 of the materials budget on content. There are years of larger growth when additional strategic funding is available. Strategic funding is used to enhance the collection with additional formats of popular titles, limited editions, and rare or expensive items. Equipment purchases have a median of about \$2000 a year with a few years bolstered by end of year funding when available. The Library’s content now includes games that support the curriculum and collection goals; top-rated and high-interest popular games; games historically relevant to game history; games that push design and technology boundaries; and games that support intramural and collegiate esports teams.

Over the last ten years, Library staff has managed continuous change and curated a collection that supports all patrons. What content challenges does the Library expect to face over the next ten years? The Library will continue to seek ways to provide content in a growing digital world with minimal multi-user institutional licensing agreements. Other new challenges will be providing access to content that is moving into the world of cloud-based gaming, providing access to new content that requires rapidly evolving equipment, and managing aging physical formats.

Console video games are moving toward a digital-only world much like PC games did in the mid-2000s with 83% of content now purchased in a digital format (Entertainment Software Association, 2019). There is a chance that consoles will go disc-free in the next ten years. Luckily, the next generation of consoles set to be released in late 2020 will use discs and developers are still producing content in a physical format for most popular titles.

Another technological development on the horizon that might affect libraries is cloud gaming. In cloud gaming, all the data and hardware reside on the company server and are streamed to the user’s device (Gurwin, 2019). This type of gaming should ease hardware requirements for gamers. However, it



requires a fast and stable internet connection above 15 Mbps (Petite, 2019) over fiber to the home (FTTH) optical fiber or cable with stable connections, low ping, and low packet loss which is not available everywhere (Shadow, 2019). In 2020, only 61% of people in the United States have access to broadband (Statista, 2020).

Much like born-digital content, access to cloud gaming services has issues related to licensing. An initial scan of current cloud gaming platforms indicated a lack of licensing available for more than an individual user. Apple Arcade currently provides an option to share access with up to six family members; however, this is the only subscription that indicated a potential for additional users on the same account (Apple, 2019). Additional cloud-based gaming options including Google Stadia, GeForce Now, Shadow, Vortex, Parsec, and Steam Café provide no information on the potential of an educational or academic licensing option nor do they have a method for contacting the company to request or suggest this option unless a current user login is active. This severely limits the available options for libraries to explore or assist in creating options for libraries because even creating a user account requires accepting an end user license agreement (EULA) which requires review by legal.

One additional vendor, Viveport, maintains a contact form that allowed individual vendor contact. After discussion with the vendor, it is clear that additional conversations surrounding academic institutional needs are necessary. The representatives were readily able to offer the physical items used in VR; however, they seemed hesitant or unsure about what cloud games would be relevant, wanted, or available institution wide. This is certainly an opportunity for collaboration between librarians and cloud gaming providers.

The presentation “Gaming Collection Census – A current picture of Gaming in Libraries” noted that a majority of libraries, both public and academic, would consider purchasing products with multiuser licensing. (Robson, D., Brannon, S., & Dewitt-Miller, E., 2019) This indicates that there is a need for discussion on affordable multiuser library licensing to support research and study in game design. The need for this discussion becomes more imperative as more content is born digital.

Reliable access to cloud gaming could ease the need for frequent hardware upgrades of library computers. This is good news for many libraries, but less so for the UNT Library because of the Library’s support of the university esports teams. Cloud gaming is still not seen as reliable enough for competitive gaming at this time in the esports world or the university varsity esports league (Ashley, 2019). This means that hardware upgrades will continue to be a necessity for the coming years in the UNT Library, but if quality curated content is made available with access to an institutional license, cloud gaming could be a valuable resource for other libraries without equipment budgets.

Cloud gaming, at first, seems like it might negate the need to provide access to equipment for play in the library because students can play anywhere on any device, but the UNT Library is not just a space to access equipment, it is a third space. As noted above, a third space is a place for people to relax and engage with others that is not home or work/class. Not only have staff worked hard to provide access to content and devices, but they have also worked to build a welcoming space for students to play and engage with each other regardless of the format of the content and user’s equipment needs.

Access to indie and educational games continues to be a challenge and now libraries can add extended reality (XR) games to the pile of hard to access games. Extended reality is a term that encompasses Augmented Reality (AR), Virtual Reality (VR), and Mixed Reality (MR) (Kiger, 2020). All of these types of

reality transport a user into a virtual world. While AR and VR include some real-world overlays, VR is a fully immersive experience. A 2018 survey listed 46% of organizations in the education sector demand virtual reality services (SuperData Research, 2018). Universities are creating individual XR learning activities to engage their students, but it is not easy to access these individual virtual digital assets (McMurtrie, 2019) and questions of ownership often preclude sharing of these materials. Currently, there is no authoritative resource for quality curated educational XR content. Much like indie or educational games, libraries can curate their own collection by providing links to educational interactive XR and 360 videos. As this technology advances and XR providers compete to provide access to this content, the permanence of these sites remains unknown so the Library will continue their policy of only creating library guides to these resources for specific classes.

Another issue that libraries with video game collections face is content on formats that are in a constant state of change and even decay (Ore, 2017). There are archival needs that should be considered as these collections continue to move forward into new formats for new gaming devices. The UNT Media Library is not an archive but finds itself dealing with aging materials and archival needs. How does the Library manage an aging video game collection? Does the Library keep circulating items that have become rare or hard to find? Librarians and archivists interested in video game collections need to develop best practices for libraries that are not archives yet are dealing with aging collections. This will ensure that these items continue to be a resource for designers and scholars.

Much like other digital collections in the library, there are challenges related to providing game content. Surmounting these challenges has not dampened any of the enthusiasm for this collection from students, faculty, or staff. 214.4 million people in the United States play games (Entertainment Software Association, 2020). Video games are an ever-growing part of our culture. The Library will continue to meet the challenges related to providing this content in support of the growing needs of scholars, future designers, and play.

### **Equipment and Space**

The Library's collection of video gaming equipment has increased dramatically over the last ten years. Factors affecting its growth include industry standards, content requirements, collection priorities, user services, and funding. In 2009, two in-house console stations with three consoles at each station and three circulating consoles were added to the Library. The collection consisted of new video game releases so as new consoles were released; they were purchased. In the next four years, three more console gaming stations, and four PC stations were added to the Library. Maintenance of the equipment and space remained minimal with technology needs and troubleshooting handled as needed.

Over the years equipment and space needs have changed. A new degree in Game Studies and new classes have broadened the collection's scope to include more narrative games, retro games, and devices. In addition, an influx of funds from Student Affairs in support of collegiate esports and student recreation transformed the gaming space in the summer of 2017. Today, the Library circulates fifty consoles, game controllers, and XR devices to support research, instruction, and play. It has grown from a few gaming stations to three spaces in two separate libraries with twenty-eight PCs, eleven console stations, and tables for play or study. This growth led to the need for additional staffing and processes to manage equipment, materials, and space

The challenges related to equipment and space are a bit more manageable than content access because they are in the Library's realm of influence. Forecasting patron needs and preparedness have been key to success. The Library has had great success in building a robust space with up-to-date equipment, but it has not been a linear growth. One challenge the Library faces with equipment budgeting is that the UNT Library allows for the purchase of content with the materials budget but not the equipment to play this content. How does the Library manage the equipment budget? The equipment budget is managed by paying close attention to circulation, loss and breakage, and potential future needs.

Equipment needs and expenses are a factor each year and being able to predict these needs can help normalize the costs from year-to-year. Some of the items with easier to manage costs are consoles, PC upgrades, consumables, and replacements. New devices, such as extended reality (XR) devices and their related peripherals are harder to predict and manage.

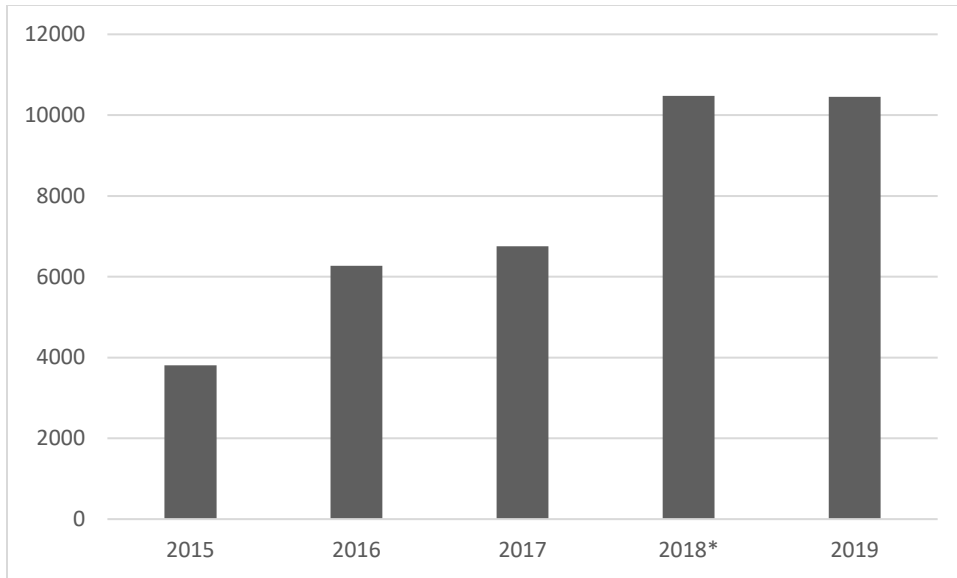
The Library endeavors to provide access to new consoles as they are released every five to seven years in support of new content for recreational play and esports. PCs, or at least their video cards, could be upgraded every two or three years to support new game requirements. Yearly budget needs include consumables like rechargeable batteries, replacing broken or lost game controllers, and auxiliary devices. These purchases and upgrades are fairly consistent and easier to budget for yearly.

Providing access to new devices, such as XR headsets or haptics, is not as easy to gauge. Extended reality (XR) devices offer no consistency in release dates and often new or updated devices are released quickly because of their rapid state of development. Predicting which XR device will be the standard, receiving support and updates after release, is not an easy task. Supporting research that uses XR devices can easily strain an already tight budget with the costs in 2019 of the headsets ranging from about \$250 for the Oculus Go to \$1000 for the Valve Index (Statista, 2019).

The Library budget now includes the addition of retro consoles (Atari 2600, Sega Master, Nintendo 64, etc.) to support retro content needed for coursework. These consoles are expensive, hard to find, and sometimes delicate. The Library is still learning how to effectively purchase, manage, and maintain these items. At this time, use of game cartridges and the consoles that play them is limited to patrons who are conducting research or instruction to limit loss and breakage. Recreational retro play is provided using emulators such as the Super Nintendo Entertainment Classic edition or the C64 mini, which include retro content.

Managing equipment requires careful consideration of the collection and how it is being used and will be used each fiscal year. Library staff create a list with new and replacement equipment needs. In doing so, they aim to effectively support all of the various wants and needs of library patrons, despite there being no guarantee that all budget requests will be met each fiscal year. Generally, careful management has allowed the Library to fulfill most of these needs over the last ten years.

Managing equipment use in Library space is another task that has grown along with the collection. In 2009, usage of four PCs was easy but the addition of twenty-four new PCs into two spaces required a reservation system and additional security features. The increase in reservations and space usage is illustrated in Table 2.



\*Esports funding increased devices for play

Table 2. Console and PC use

The Library PCs are on a library network that is monitored and managed by the Library technology staff. A part-time student manages day-to-day updates and software fixes. Two full-time outreach and space management assistants, one in each library, report issues and manage troubleshooting as needed. To help prevent tampering, the Library requires students to reserve a station with their student login and each station reloads to a start screen between patrons. These spaces are monitored by security cameras that allow staff to retrieve security footage if needed to support behavior management decisions

The ten console stations are easier to manage because patrons use either a physical disc or log into their own online account to access digital content. Tampering on console systems is almost non-existent and patrons are reminded to use caution and log out of their accounts after play. Consoles require minimal trouble shooting with most of the problems related to aging or unplugged cables.

As the collection has grown to overtake the UNT Library space, space management has become a bigger issue. To create a welcoming and well-managed space, staff work to build rapport with students, help manage volume, police any improper language, and help troubleshoot technical problems as needed. The outreach and space management staff members have the authority to remove patrons from the space for a set period or permanently depending on the infraction.

Collaborations with student and university organizations is a big part of engaging users in the space and managing its use. Official university groups are granted additional checkout and space privileges. The Library believes that building a rapport with these groups creates ownership of this space and the collections, which generally leads to better care of the space. These groups know that they are welcome to use the space but that their behavior influences the continued growth and use of the collection.

What are the challenges that the Library will face with equipment and space over the next ten years?

Budgeting to purchase new and old gaming devices will continue to be a challenge. There will continue to be new devices and peripherals for play. Regardless of budget, adding new devices and replacing gaming PCs is expensive.

In the next ten years, the Library will have to replace twenty-eight gaming PCs. Vendor warranties and the daily maintenance of these PCs govern best practices that often require the replacement of the entire PC and not just an individual component such as the graphic card. This allows for more effective daily management although it can cause budgeting issues as these machines age and need to be replaced.

New consoles will need to be purchased with the release of the next generation in 2020. Early console predictions are that the Sony PlayStation 5 (PS5) will be backwards compatible for initially at least the top 100 PS4 games (Chaney, 2020), include a disc drive, and support the PSVR headset. The PS5 will include a solid-state drive; hardware to improve graphics rendering and cloud gaming performance to support seamless play on PlayStation Now and their Remote Play services; and a game controller with improved haptics (Hood, Lynch, St Leger, & Boyle, 2019). The next Xbox console, Xbox Series X, should be a more powerful machine, will also still include a disc drive, be backwards compatible to all previous generations of Xbox, and allow the use of Xbox One peripherals (Hood, Lynch, & St Leger, 2019). The move to support older game formats and some older peripherals, such as PS4 VR, on a new console is a benefit to the Library budget.

This generation of consoles, the ninth generation, is moving towards a digital-only world but fortunately still allows the use of discs for content. The next generation might be digital-only with many of the major game platforms moving users toward their online cloud-based gaming services. At this time user internet speeds and platform costs will determine the success of these endeavors. One benefit of these online services is the ability for PC users to play formerly console-only games.

Since XR devices, haptic devices, and content for these devices are changing rapidly, predictions are hard to make. Entertainment content for these devices has been on the verge of a breakthrough for years but costs for consumers is still a factor (Jenkins, 2019). Users expect to be able to play video games (53.9%), take virtual tours (44.5%), watch videos (44.5%), watch live events (32.3%), and use VR for education (29.9%), social interactions (25.4%), and shopping (20.8%) (Statista, 2019). Various industries are using XR to create immersive training scenarios for these devices, which might influence the Library collection as it supports university departments related to these industries. This means that the Library needs to continue to follow trends and try to predict which XR device is best for library patrons while still fitting within the budget.

Accessibility is an issue across collections (Peacock & Vecchione, 2019) and the Library will focus on providing equipment and materials to increase access for all patrons. Video game content created after 2019 must meet accessibility requirements, specifically those related to communication, such as UI information and chat systems. (Taylor, 2019) New adaptive devices are being released like the Microsoft adaptive controller (Microsoft, 2019) and the bundled kit of controllers offered by Logitech (Logitech, 2019). Other adaptive devices, like a one-handed Switch game controller adaptive device, can be 3D printed in the Library makerspace. Providing access to these devices is the least that a library can do to support play for all patrons.

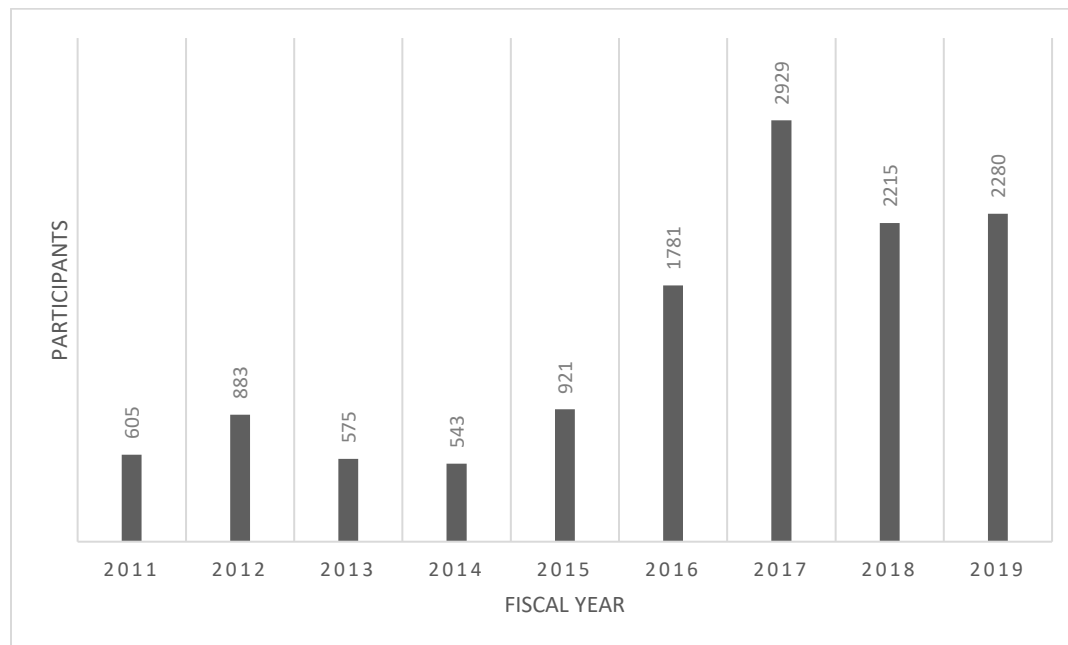
In the Spring of 2020, the Library was thrust into a new reality which required rethinking how it manages collection growth during COVID. Forecasting budgets and supporting content and equipment needs during this time are still important even if funds are not available for actual purchases. The need to halt purchasing when the funds are needed elsewhere does not mean that the Library will stop creating lists of needed items. In the past, the Library has had lean years, but has managed to catch up when times were more robust. The goal is to always be prepared to spend money to support patron needs even during lean years. At times money does appear suddenly and the Library is always ready to take advantage of these opportunities when they happen.

COVID has also affected the use of Library space because of distancing requirements. At the onset, the Library closed and circulation halted for all items. In the fall of 2020, circulation began again with a delay between checkouts to mitigate spread of infection. In the fall of 2020, the space is still closed except for limited use by faculty recording play for coursework and the collegiate esports teams. Masked esports players without reliable access at home will practice and play tournaments on computers that have been moved the appropriate distance from each other. As the pandemic continues, plans will continue to change to support those needing access to the collections and spaces

Budgeting for the Library and managing the space it resides in will be challenging over the next ten years, but it has always been so. The Library will continue to manage technological changes, funding challenges, and societal changes as it engages with patrons to meet their gaming needs.

### Outreach and Events

During the last ten years, the Library has focused considerable energy on promoting the game collection and space, which led to increased visibility and growth. Library events are the primary way that the Library gains this visibility. These events are primarily recreational, but student clubs, organizations, and outside professionals are often invited to speak about the game industry. In 2009, the Library hosted eight gaming events. In 2019, it either hosted or provided materials or space to eighty-four events. Fifty-six of these events happened in the Library. Attendance for library-hosted events is illustrated in Table 3.



*Table 3. Library-hosted event participants by fiscal year*

Staffing is an important factor in increasing outreach and programming efforts. In 2015, a full-time staff member was hired to support the growth of this collection which included helping manage the game space, supporting events, performing outreach activities such as tabling, and managing social media. In late 2018, an additional space management and outreach staff member was hired. These staff members each do similar work on two separate campuses. The games and education librarian supervises these staff members, a part-time student assistant, and any practicum students as they all work collaboratively to manage the collection, outreach, and events across these campuses.

Recreational use of the collection has grown each year since its inception but increasing visibility and use of this collection by university faculty and university departments has not been as easily achieved and has required significant outreach efforts. This is a familiar task for any librarian working to support faculty needs without faculty input, but opportunities do arise from the most innocuous meetings.

The additional staffing noted above has allowed more networking at game-related events on campus. This has allowed the Library to build relationships with faculty interested in using games to support classes and research. Networking is not limited to the campus. Library staff attend events all over the metroplex to meet industry professionals and others in the game industry. The end goal is to try to foster collaborations with these groups. An added benefit is that these collaborations help these industries see the value of libraries that might lead to some forward movement in library licensing needs. In the last year, the Library's efforts to increase visibility and engagement has led to success with departments on campus who now see this collection as an asset when recruiting faculty and developing classes related to game studies.

The game collection is gaining visibility as a valuable recreational resource across campus. Other departments that support recreational play realize that the Library has the infrastructure and knowledge for managing these items and are donating their items to the Library to circulate. This leads to more visibility and grows the collection while allowing more egalitarian usage of these resources across campus.

The Library has worked to bring visibility to the collection by reaching out to campus student organizations, Student Affairs, and Residence Life. Student organizations immediately saw the benefits of this collection and have used it since its inception for their events. Student Affairs and Residence Life were a bit harder to reach, but in 2017, the Library had a breakthrough with both organizations when the Library was asked to participate with Extra Life, an initiative to benefit children's hospitals by fundraising through gaming. Meetings about this event helped university staff see the types of resources the Library can provide. They soon began including the Library in more university events such as Sibling Day and Family Weekend. They now use library materials for orientations, tailgating, and other university sponsored student events. Both organizations now rely on the Library to support many of their gaming needs. This has led to even greater visibility and an increase in usage across campus with departments reaching out seeking collaborations and use of the collection as they plan events.

Another way that the Library has increased visibility was to catalog the collection, both content and equipment, to allow users to easily find what they need. A well-cataloged collection with appropriate genre headings allows ease of use for both staff and patrons. Cataloging the collection not only allows patrons to find what they need but also allows the Library to easily promote the collection, track usage

and assess what type of content needs to be added or replaced. The librarian not only adds new materials but monitors which materials are robust enough to handle circulation to the community. This allows for a more effective use of the budget when ordering supplies and peripherals to support play.

The Library will continue to see challenges with outreach and promotion. Networking and being visible on campus will continue to be paramount. The way the collection and events are promoted will continue to evolve along with the current social media trends. This means predicting where students might be and staying on top of trends to meet them in their spaces.

Event management will continue to be challenging as well. The Library's events are well attended but keeping up momentum can be challenging. Monthly events can grow stale and the goal is to always seek new participants with new ideas and voices that lead to a more vibrant space. Increasing diversity and play across formats and genres is a continuing goal for the next ten years.

Assessment is another challenge. The Library has card swiped patron ID cards at events since 2010. This card swipe allows for the collection of a large amount of demographic information, but the Library currently only uses the total headcount as assessment criteria in its annual reporting. Is the event attended? ... and anecdotally, did everyone have fun? Demographic card swipe statistics as well as general observation did reveal gender imbalances and the UNT Library created a few events and changed how it managed some patron behaviors to increase visibility and use by women.

The Library is doing more assessment of students across campus to gather their knowledge about library services. These assessments can help the UNT Library as they determine outreach strategies. The university is also becoming more data driven in its decisions. Looking at some of the specific card swipe data related to student retention and grades could help the Library know how this collection affects students.

COVID and the need to social distance has had considerable effect on how the Library approaches events and engagement for the near future. There will be a decline in circulation and event attendance for the duration of this event, but this time allows the Library to develop new programming for a digital space. This development is being done with consideration of future support as everyone goes back to face-to-face events. A goal is to create programming that works now and in the future. The Library is engaging patrons in a digital space on Discord, leading online conversations about game play and game narrative, playing together in digital game spaces, developing digital content to engage patrons in online play, and providing a space for students to engage with each other and look for groups to play together.

Skillsets that the Library's staff and student employees were already building in their online personal gaming lives has helped this transition into a digital environment. New skills, such as streaming, are being developed that can only enhance the Library's engagement with students regardless of space. It might even attract gamers who feel more comfortable in an online space. This endeavor has been a silver lining during this time of upheaval.

Over the next ten years, the game industry will continue to change, and the Library will continue to change in response to provide access and engagement. Collaborations will continue to be a playful way to increase visibility of the collection. Library staff will continue to network, provide solutions, and engage to encourage use of this collection across campus.

## **Conclusion**



The collection is now ten years old. The Library has successfully met challenges related to collection development, technology, and space needs. Event attendance and anecdotal evidence indicates that the collection is contributing to student engagement, student recreation, and classroom instruction. One of the biggest factors in this collection's success is that the staff is invested in its success and is willing to alter processes and make the decisions needed for its continued growth. It started with a focus on materials and programming for students and a few faculty members interested in games. Success in supporting these individuals has resulted in additional alliances across the campus with university departments and the growth of new programs and degrees related to esports and game design. The relationships that staff have nurtured and developed over the years continue to lead to opportunities for collaborations and growth.

The video game collection will always be in a state of constant flux. It now has the added goals of supporting growth in extended reality (XR) (virtual, augmented, and mixed reality technologies), collegiate esports team, a renewed interest in retro games and technologies, and a desire to provide more accessibility options. In the next ten years, the Library will continue to grow collaborations and seek new ways to engage students with games and play. Managing challenges related to content, access, equipment, space, and outreach, with the goal of effectively supporting students, staff, and faculty can be exasperating but is also exciting and rewarding. It is a great place to be.

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