

Redesigning DigiPen – Component Access

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Problem Statement: Incoming design students lack access to physical game components.

Rapid design periods leave little time for students to make or acquire quality components.

Locations to acquire components are either limited in selection or accessibility to students.

Systems development, design iteration, and playtest feedback can be muddled by limitations of and responses to poor components.

UI/UX focused students struggle to develop interesting work in early design courses.

Access to more varied components opens greater opportunities for creative overall design.

Current Options:

Purchase from Game Stores:

Uncle's Games is a local game store which offers a variety of components and a discount to DigiPen students. However, the travel requirements and cost can render this less of an option for some students. The DigiPen student store on campus also offers components, but their selection is limited, and many students don't know about their stock.

Make or adapt pieces:

Students can make components with simple supplies such as pen and paper, but this can take time from development and the quality of these may hinder testing and grading. Local craft and hardware stores carry items that students can craft into components, or students may even buy old games from thrift stores to reuse pieces, but this is again a time, travel, and cost commitment which some students may not be able to meet.

Take or borrow pieces from others:

The library has components students can check out to use, but this isn't well publicized and requires the components be returned, and is also not accessible at the moment as the library continues to move to the Wing. Students who have completed their tabletop design courses, as well as some instructors like Professor Holcomb, have extra parts that students can use if they ask. However, this isn't a structured or systemic solution and doesn't work on a large scale.

Past Proposed Solutions:

Tabletop Simulator:

During remote learning, students used the game Tabletop Simulator to craft and test game prototypes, and some have suggested retaining this structure when returning to in-person classes. The game offers several options for premade and customizable components, but requires knowledge of the software and presents issues with rapid iteration and remote testing requirements.

Provide more options on campus:

My initial concept for this project was to increase the stock offered by the student store, offering a reliable in-house source of staple components. However, further research into the bureaucracy involved in stocking the store and the budgetary concerns of both the store management (what with recent changes to the school) and students (both on a greater tuition and individual purchase level) makes me doubt this solution's feasibility, at least at the current time, particularly as such a change would only benefit a fraction of the student body. Professors have proposed providing incoming students with development kits or a stock of parts which they can use freely at their discretion, but this again isn't feasible to be funded by the school or professors.

User Interviews:

#1 – Chris Cassidy, BAGD

Interview conducted 1:00pm over Discord, 9/17/2021.

Chris designed tabletop games for Des101 and Des105, and primarily sourced his components from the school, buying pieces from the student store and making boards on school printers. Chris felt that his needs were not always met by the student store – some pieces like card holders were versatile, but many of the pieces on offer (planes, tanks, etc.) were too specific for general use, and overall, the selection was not as versatile or diverse as he would like. Whenever needed and possible he would make modifications to the available pieces. Many of his games' systems ended up being built around the components available to him, which he found limiting, though he doubted it affected his grades.

When asked about Tabletop Simulator, he said he enjoyed the freedom to create more polished and varied components, but that it made testing more difficult. Overall, he stated that he wished there were more component options available to students within the school.

#2 – Nate Borger, BAGD

Interview conducted 1:52pm over Discord, 9/17/2021.

Nate has designed tabletop games for Des105 and Des220, and has TA'd for Des105. When designing games, he sourced components from the store Uncle's Games, which provides a wide variety of components at a discount to DigiPen students, supplementing that with orders from Amazon and occasionally borrowing from friends. This worked for him, but he acknowledged that other people may not have the time or money to do the same – one would either need to walk or get a ride there, and even discounted, the costs may be concerning to some students. Earlier on he used the student store, making games based on the components available, but as his designs became more detailed the store's specific offerings didn't serve his needs, whereas Uncle's components allowed him to pursue more complex designs.

He never found UX design to be a major concern in terms of grades, given clear expectations and low grade percentage, but it mattered to him in order to build out the game experience and to get better playtest feedback, as players who were put off by poor components would struggle to give valuable feedback on systems.

Nate found Tabletop Simulator interesting from a UX design perspective, as the platform provided more complex premade and customizable component options and allowed for much greater numbers of components. However, TTS presents its own challenges, as iteration is slower and remote playtesting can be more difficult.

Describing his work as a TA, Nate discussed how he would provide students with components from his own collection and watch them trade amongst themselves. He also wondered if there may have been a library program for piece exchange.

#3 – Raven Montoya, BAGD

Interview conducted 2:10pm in the Edison lab, 9/17/2021.

When opening the discussion of component accessibility he, unprompted, brought up his appreciation of the Tabletop Simulator design pipeline, how he found it more freeing with its immediate access and modification of components. When asked about his design preferences, he stated that if possible he's like to transition over completely to TTS, for both its financial and class performance gain.

Raven primarily sourced his components from Uncle's games, which provided a good variety but had its struggles – he would have to get a ride there, which took time, and while the costs were discounted, they were still higher than he would have hoped. Occasionally, if he was struggling to find a specific component, he would also ask Professor Holcomb who would usually have what he needed. He stopped into the student store a few times, but barely bought any components as the selection was too limited. He stated that if their variety was increased, he would have found it a more useful and convenient option.

Raven found that the components he had available somewhat limited his design ability, as he would have to make systems changes if the components wouldn't allow for his original intent, which he found frustrating and believed had a negative effect on his design ability and class grades.

#4 – Jozie Brajkovich, BAGD

Interview conducted 2:26pm in the DigiPen café, 9/17/2021.

Jozie has designed tabletop games for Des101, Des105, and Des220. She primarily created her own components with materials from craft stores or utilized items from thrift stores, as these were the cheapest and most versatile options. When asked if she ever used the student store, she stated she hadn't realized they sold components, but that even so the costs of items there were generally beyond what she was willing to spend. She expressed that while sometimes she wished she had greater component access and occasionally felt that her development process was hindered, she was generally satisfied with her work.

During discussion, she stated that the switch to online courses helped her UX development as courses transferred over to tabletop simulator, as it provided greater component development options, but that it also created struggles with playtesting and that she still preferred physical development.

#5 – Joseph Crump, BAGD

Interview conducted 2:28pm over Discord, 9/18/2021.

Joseph has designed tabletop games for Des101, Des105, and Des220. He primarily sourced components from Uncle's Games, which for him was a fairly short drive (though still a time commitment) and at a reasonable price point. However, he found the parts available there often didn't suit his needs. Often he would design games and systems around the components available to him, which was frustrating when developing more complex systems and game themes, but also forced him to get more creative in his design. He also discussed occasionally borrowing or trading parts with other students, and postulated creating some kind of more official exchange program. He didn't feel that component access much affected his grades, given its low priority in the grading rubrics, but did feel it still mattered on an artistic level.

Joseph had apparently stopped by the student store early on and found the available parts to not be useful, being too functionally limited or thematically specific. He felt that a better stock available would be good, but had concerns about the costs versus the benefits as this issue largely only concerns the first two years of one degree program.

Per his thoughts on Tabletop Simulator, he did agree that component design was easier, but did not prefer the program, finding in-person testing and iteration more valuable.

#6 – Contessa Rivail, BAGD

Interview conducted 4:51pm over Teams, 9/18/2021.

Contessa primarily sourced her components from craft stores and game stores, supplementing this by reusing or borrowing materials wherever possible. This was a major source of stress for her, as the time and energy put into finding and making components ate into her time to develop game systems. She also mentioned how she completed the course with a lot of spare pieces left over, and wished there was an easier way for upperclassmen to pass on their pieces.

She never used parts from the student store as she felt their offerings were usually not useful to her and often poor quality. If the student store carried a wider variety of items, she said she'd consider using it.

#7 – Tyler Swan, BAGD

Interview conducted 5:59pm over Discord, 9/18/2021.

Tyler has designed tabletop games for Des101 and Des220. He largely sourced components from local game shops and by taking components from games already in his possession. He never used the student store as he didn't realize they had components available and didn't feel he needed anything more than what he had. He didn't find the lack of component access to be a major concern given his existing access and focus on systems design over UX development, though he did note that it could cause problems with playtesting.

Comparing development in person and over Tabletop Simulator, he felt that there were pros and cons to both. TTS offered more flexible components, though customization could be difficult, and playtesters were generally more available online than in person. However, physical development offered greater adaptability and iterability.

#8 – Chace Diamond, BAGD

Interview conducted 1:33pm over Teams, 9/19/2021.

Chace has designed tabletop games for Des101, Des105, and Des220. He largely made his own paper components or drove to a nearby craft store. Cost was rarely a concern, but was an occasional frustration, and while it did take some time, he also enjoyed the process of component creation. While he never felt that his designs or grades were affected by his component access, he could tell it was a concern for others.

He did visit the student store, but didn't get anything as the selection was not useful to him. He would have appreciated if the store had better stock, as it would save time and energy finding components.

While he enjoyed physical iteration, Chace did say he preferred the TTS pipeline, as testing and development went more smoothly.

Summary:

The most common sources of components were game stores (50%), craft and thrift stores (50%), personal creation (38%), and borrowing or trading with friends (38%).

Almost all respondents (88%) were either unaware or unsatisfied with on-campus sources of components such as the student store or library.

A majority of students (63%) noted component access as a source of stress, whether due to grade impact, playtesting issues, time commitment, or financial strain.

Half (50%) of the students interviewed reported that their project design was significantly influenced by the components available to them.

While almost all students (88%) reported that they were interested in Tabletop Simulator, only two (25%) said they fully preferred it over physical development.

Multiple students (38%), unprompted, expressed interest in passing on pieces to new students.

Stakeholder Interviews:

#1 – Professor Jeremy Holcomb

Interview conducted 11:10am over the phone, 9/20/2021.

When asked his thoughts on student access to components, he stated that there was always going to be variance in students' access to components, and that he understood how it would be a source of stress for students. In past years, some students have become too focused or spent large amounts on components to the detriment of their system designs, or become stressed by the polished appearance of others' work despite strong systems. The idea had been floated to assign specific component sets to students, but it had been decided against as it would limit the design possibilities available to students.

Addressing students' concerns about the effect on their grade, he stressed that UX grading relied far more on students' documentation of their process than the components themselves. While component quality issues can make playtesting difficult, he tries to make it clear to his students that they should be more focused on issues of system design than user experience – “you can't buy your way out of design problems.” Even UX focused students should learn to work with cheap components, focusing on the feel more than the look, especially as pouring time into component development leaves less room to alter one's systems if the components don't fit new concepts.

Discussing sources of components, he recommends visiting Uncle's Games or local craft and thrift stores. He also recommends students ask him for help, as he has quite the collection of spare components, but realizes that this isn't a systemic solution and wonders if there should be some form of onboarding structure. Concerning the student store, he feels their component selection is lackluster but not meant to be a one-stop solution, and he has never been asked by the store management what they should be stocking.

When asked his thoughts on Tabletop Simulator, while he admitted his bias as a tabletop developer, he much prefers physical development. The time required to learn the systems, build, and iterate in TTS can obstruct the development of gameplay, and the controlled virtual environment makes it more difficult to discover issues with a game's UX in different contexts.

When approached later about the concept for a component drive, he found the idea interesting and wanted to see the full proposal when it was finished.

#2 – Professor Boyan Radakovich

Interview conducted 2:00pm over Teams, 9/24/2021.

When asked where he would recommend students acquire parts, he discussed buying old games from thrift shops to reuse pieces, visiting Uncle's Games, or checking the student store as he has been known to call down and let them know when students will be needing parts. While in his own tabletop class, Des101, the professor's students can do perfectly well with "graph paper and Sharpie", as the class prioritizes systems and function and spending time on visual design can hinder iteration. However, he agrees that having accessible design resources is important for other development courses such as Des220 and Des320.

Discussing Tabletop Simulator, Professor Radakovich found its utility outside of remote learning dubious. The software takes time to learn that eats into development time and isn't a useful skill in the greater industry, and students are limited in the games they can make (e.g. they can't make dexterity-based games) and their ability to iterate quickly with the customization and virtual testing requirements. He theorized about giving students Unity prototypes of games to alter for his class in order to bolster both programming and design skills, but this would require a fair bit of development time and coordination with other classes.

Further considering students' access to components, he discussed his desire to provide students with development kits or a parts repository provided by the school, but reflected that this wouldn't be cost effective. When pitched the concept of running a parts drive through the library, he was initially skeptical, citing his previous experience with game libraries and concern that parts wouldn't be returned. When the concept was explained in greater detail, elaborating upon the donation- and take-as-you-need system, he was more receptive and approved of the idea. He noted that students would need to be allowed to rummage the contents on their own to find the parts that best suited their needs rather than have the library staff try to fulfill requests, and suggested that professors could "check out" the boxes from time to time to bring to their classes on lab days.

Summary:

While the professors encourage students not to be overly concerned with components, as the classes are more systems-focused and can teach about working creatively within limits, they do support making components more available to smooth out the design process and decrease student stress.

Both tend to suggest shopping at game, craft, and thrift stores for components.

Professors have considered the prospect of providing students with components directly, but have concerns over the financial requirement and that students may be limited in their design options if provided with set components.

Neither is interested in switching over to Tabletop Simulator for reasons of technical requirements and practical applicability.

Both expressed interest in the component collection idea.

Research Interviews:

#1 – Jason Thiel, RTIS, President of the Associated Students of DigiPen

Interview conducted 12:07pm in the DigiPen café, 9/22/2021.

Per Jason, students unaffiliated with student government may bring problems, demonstrate research, and pitch solutions related to DigiPen at meetings of the ASD or on their Discord. From there it can be discussed among members of the ASD and passed up the chain through elective executives and administrators who may make a change. This can be quite effective as many DigiPen higher-ups such as Chris Comair are in frequent contact with student government and many changes have been made to the school in this way.

Discussing the idea of a student-led component drive, he found the idea quite interesting, and noted that a similar program had been implemented in the art department where upperclassmen could hand over leftover supplies to incoming students. This program was quite helpful, as it ensured new students could use unusual or expensive resources, old supplies weren't wasted, and the sharing created connections between art cohorts. From his observations, a similar system could be helpful to ease incoming designers into the program. The primary issues involved to his mind would be finding a location for this collection and getting the word out to students about this new resource.

#2 – Alex Comair, Director of Operations

Interview conducted 2:00pm over Teams, 9/23/2021

Discussing the stocking of the student store, much of the ordering of food and school supplies is handled by the head of food services, currently Dustin Nick. Game components are purchased from Amazon and GTS Distribution and stocked at the request of the design department, with restocking based on the last known request, though Mr. Comair couldn't remember any recent requests or when the last order was placed. Discussing the prices of student store items, components are only marked up up to 10% - the student store aims for convenience, not profit, only marking up enough to break even and cover marketing costs. Currently, the student store's budget and the balance of convenience vs. cost is a growing concern among the administration – fewer students are using the store both due to COVID and their preferring to order supplies directly for themselves, and they don't want to hike up tuition prices to sustain a service that won't be used.

While it wasn't discussed much, he was receptive to the idea of alternate solutions for supplying components to students, wondering about having them supplied by the game department and stating that he would be open to suggestions.

#3 – Iva Groudikova, Librarian, Director of Academic Support Lab and Learning Resource Systems

Interview conducted 1:05pm in the Wing, 9/24/2021

Ms. Groudikova discussed the library's current options for components, how students could check out full board games as well as individual parts such as dice or player pieces, organized in alphabetical bins. Before the library was moved to the Wing, these items were locked away and required the help of library staff to access, but when the current system is fully implemented students will have freedom to peruse on their own. However, as the library is still in the process of moving, these components have not yet been transferred to the new location.

Discussing the idea of students being able to submit old components to a collection for newcomers, she compared it to the current end-of-semester textbook exchanges and felt that similar events could work well through the library. Initially thinking that students would have to return components, she expressed concern over lost items and logging them all into the system. She agreed when I elaborated on students being able to simply take items from the collection and expressed that she would be willing to help manage the system, but stipulated that the system would need to be well-organized, particularly as freely available components would need to be distinguished from ones belonging to the library. We also discussed how to publicize this resource, with her telling me about her efforts to keep students up to date with new features of the library over Teams and postings through the school. Overall, she seemed excited to help students and encourage the "sharing economy" of the library.

#4 – User Responses

Interviews conducted over Teams, 9/24/2021.

I reached out to students who I had interviewed for the user research portion, asking them their opinion of the component drive concept via this message:

"I'd like to hear your thoughts as one of my interviewed users on a proposal: A student-led program where professors and BAGDs who have completed their tabletop courses can donate used or extra components to a collection where incoming students can access them for free"

All participants responded positively. Joseph and Chris thought the idea sounded "great." Chace appreciated the opt-in nature of the program not putting pressure on students and noted how it would help strengthen the BAGD community. Raven welcomed the lessened financial strain on students. Tyler noted how formalizing existing component trading would make things more efficient. Nate suggested utilizing a drop box system and mentioned how past students had passed parts to him to give to new students, indicating the usefulness of such a system. Jozie was on board, comparing the system to neighborhood Little Free Libraries. Contessa was also interested, though noted that the system would have to be organized and possibly occasionally purged to remove items no one was taking.

Summary:

Starting an initiative in the student store at this time would be tenuous due to budgetary and management concerns on multiple levels.

Students are open to participating in a donation-based component sharing system.

Initiatives of this type have been successful in the past in another department.

A component donation system could be integrated into existing Library services.

Solution Proposal: Start a program through the library where professors and students who have completed their tabletop courses can donate leftover components, and current students can freely source components for assignments.

With the assistance of the ASD, the DigiPen library, and any professors interested in participating, we can set up a component donation program for students to use. To accept donations, we can set up a drop box in the library or allow students to sort and stow their donations themselves, and promote donation drives at the end of each semester when students may be looking to clear out their stock. Donations can be stored in the library in a set of shelves or drawers, near the front desk to keep them readily available to students, observed by library staff, and away from the library's games and components to avoid confusion. Signs denoting the components' purpose and rules of use may also be posted on or near their storage unit. Parts will be roughly organized into drawers or bins – not so specific as to be difficult to keep straight or create choice paralysis for students, but enough that if they're looking for "cards" or "tokens" they can quickly start searching. This project would support the student community as cohorts come together to help new students, as well as class engagement and skill learning as students would have more time, energy, and resources to focus on game development.



A potential location for the component shelf in the Wing's front area

Target Users: BAGD students taking tabletop design courses

Production Requirements:

Cost: \$50 - \$300 initial cost, depending on the cost of buying, shipping, and installing storage (e.g., shelves, drawers, bins), and whether we would want to supplement the collection with an initial supply (cards, cardboard, dice, meeples, etc.) before donations come in. There may be additional costs to upkeep and promotion.

People: Someone would have to keep an eye on the collection and keep it organized – the library staff have proven to be receptive to this idea, and students or TAs may also be called to participate. Of course, this idea also relies on upperclassmen being aware of and open to donating components, which will require publicization.

Timeline: This concept doesn't suffer any particular time constraints. However, as we transition back to in-person classes and establish the Wing, it is now an opportune time to start the ball rolling on this idea.

Effects:

Provides a variety of components with no cost or travel barrier, allowing greater access.

Greater availability of different components allows for more varied and unique project design, allowing students to engage more fully with their courses and potentially improve learning and performance.

Acts as a starting point for beginner students' development process, easing them into the DigiPen experience.

Fosters a sense of community between BAGD cohorts as upperclassmen provide resources to help new students.

Brings new students into the Wing, exposing them to other available resources and potentially bolstering the library.

Not a perfect solution, but leaves other avenues of component acquisition available for students to explore and expand their horizons.