Design Thinking for Ongoing Library Transformation

By Anne Whisken, Sia Yannopoulos, Liz Campbell and Linden Carroll

Previous Learning Landscapes articles have documented the process used at one school library to bring about the changes required to meet the demands of evolving information and education environments. They provide a case study of the way school libraries can transform their thinking and practices to bring about exciting results and the way also that a strong and supportive school culture plays such an important role in keeping library programs central to school learning culture. This issue finds a new Carey Baptist Grammar School Library built over three different levels, with new learning spaces, new ways of shelving and new collection arrangements – and the challenge of bringing the community to new understandings about how to use those spaces and collections.

Our team at Carey Baptist Grammar School Library has over four decades of library and school library practice. Our ongoing challenge has been to ensure that our libraries and their programs and spaces provide the best possible environment for research and reading engagement. The focus in school libraries in earlier years was very much on particular ways of managing and storing information and how it is best accessed, but over time we have transformed our views about the learning experiences that occur in libraries and how we manage library programs and spaces for best learning outcomes.

> . . . a strong and supportive school culture plays such an important role in keeping library programs central . . .

This transformation has been informed by our research about information experiences and spaces, and continuous action research about our own library. We are fortunate to now see those ideas realised in a new library learning space at Carey's $34M Centre for Learning and Innovation.

Transforming understandings about library learning experiences

The theories informing the transformation of our views are for the most part intentionally transformative themselves.
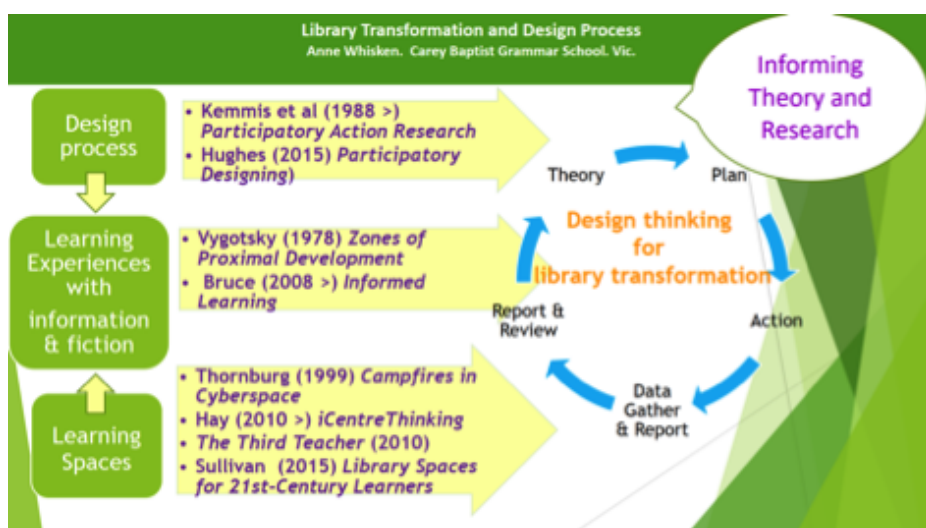

Figure #1: Theories informing understandings about library learning experiences.

As seen in Figure #1, our design process methodology is based on the participatory action research model from Kemmis (1988) and others which provides a structure for evidence-based practice and change. Hughes' (2015)

ideas about continuous participatory designing have helped us structure for continuous evolution of library spaces.

The ideas of Vygotsky (1978) and Bruce (2008) brought our attention to the learning experience itself, with a focus on changing the way we operate to become aware of the particular elements that are to be present when we design learning for *information use best practice* and for *confident reading habits*.

Library spaces that provide for learning about information and reading do not happen by chance. Thornburg's (1999) ideas were particularly relevant, bringing concepts of watering holes for meeting, campfires for group work, caves for reflective learning, and mountain tops for celebration and sharing of learning. Hay's (2010) work brought ideas about defining function then designing form. *The Third Teacher* (2010) brought attention to the physicality of learning: that the physical space is itself a teacher, and should be designed to add extra dimension to the learning experience. And Sullivan (2015) provides templates for designing and arranging library spaces to provide the forms for the particular types of learning that happen in evolving school environments.

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Spaces to provide for experiences of learning with information and narrative

As the design process developed for our learning experiences and learning spaces, the work of researchers involved in the use and experience of information added to our understandings, shown in Figure #2. Lloyd's (2015) corporeal information experiences pay attention to the role of our body and senses in information experiences – the physicality of learning – and that is very important in our design of spaces. Somerville's (2015) systems design research brings key ideas about change management in organisations. Lupton (2016) provides a clear understanding about the pedagogies associated with inquiry learning and information literacy – and enables us to see them within information experience understandings. Added to that are the crucial findings in big data reports from PISA (Thompson, de Bertoli & Buckley, 2012; IFLA/UNESCO School Library Guidelines, 2015).
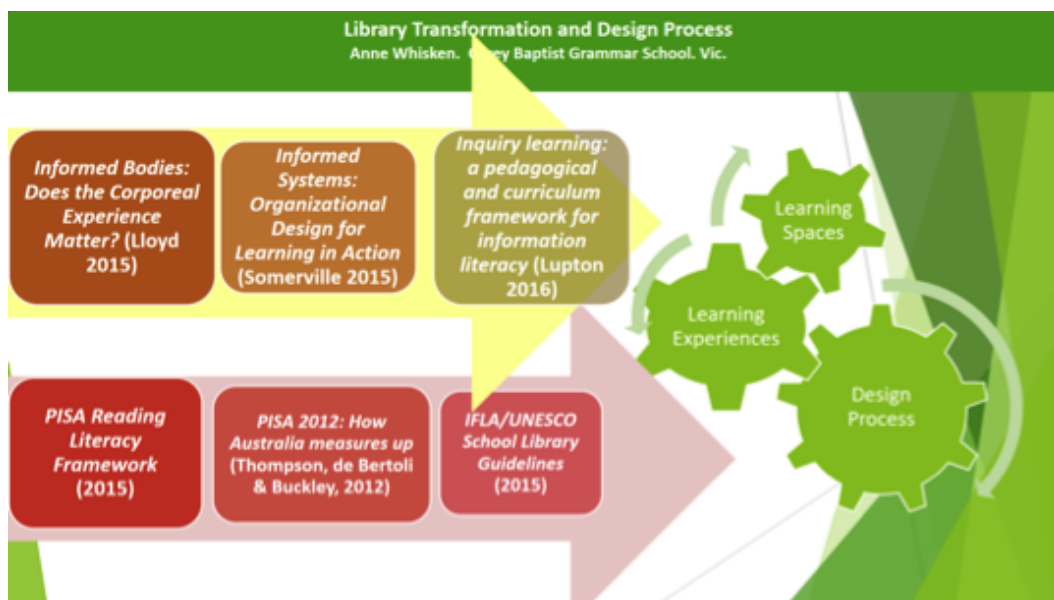

Figure #2: Theories and data about experiences of learning with information and reading.

Arranging information resources for independent access and use

As a library team in an educational organisation, our job is to:

- provide quality authoritative and level-appropriate resources to match the curriculum and learning intentions of the school curriculum
- ensure that there are expert systems to easily locate them
- link them to the context of the discipline learning.

Further, both the physical and digital library collections and spaces must be arranged to provide for different ways of engaging with the resources – including whole class, small group and individual reflective learning. The way they fit together is important if we are to ensure that users are able to operate as 'motivated, independent learners' – Carey's goal learning mode. To achieve this, our library systems, shown in Figure #3, have been selected to support 24/7 learning in a 1:1 blended learning environment, with seamless integration of:

- learning management system
- online databases and eBook platforms
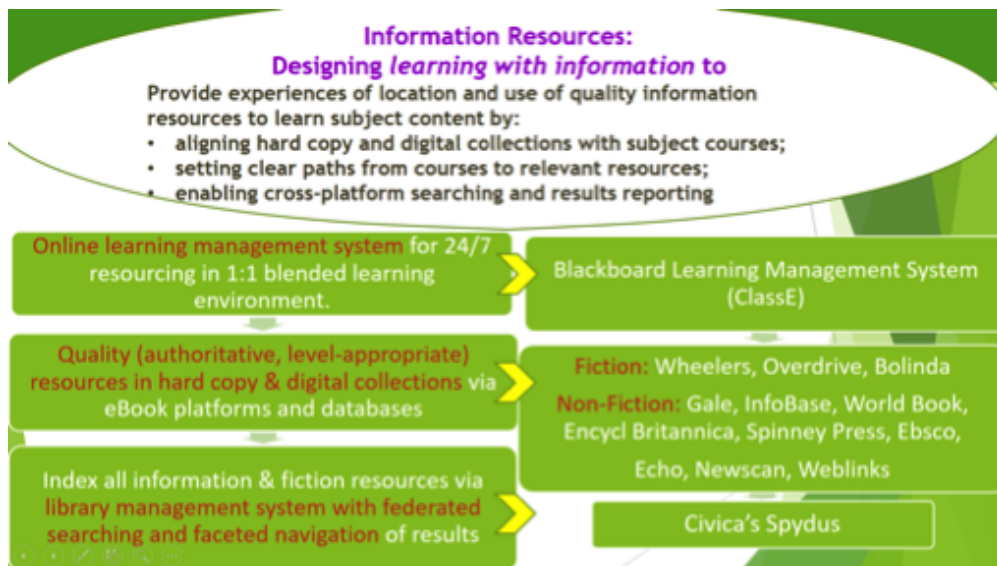- library management systems.

Figure #3: Library systems for experiences of learning with information and narrative.

Our school learning management system is Blackboard (ClassE), we have an excellent budget for both hard copy and digital fiction and non-fiction collections, and our Spydus library management system enables federated searching and faceted navigation of results.

Figure #4: Blackboard Learning Management System Library Homepage.

We use Blackboard for our Library Homepage, shown in Figure #4, because that enables easier linking between our resource collections and class pages. Using this software, we can easily create pathfinders to draw student

attention to our online resources, store them in the Library site and link to them from Blackboard subject course sites. In this way students are brought into contextual experiences of sustained immersion in quality authoritative and level-appropriate fiction and non-fiction text, shown in Figure #5.
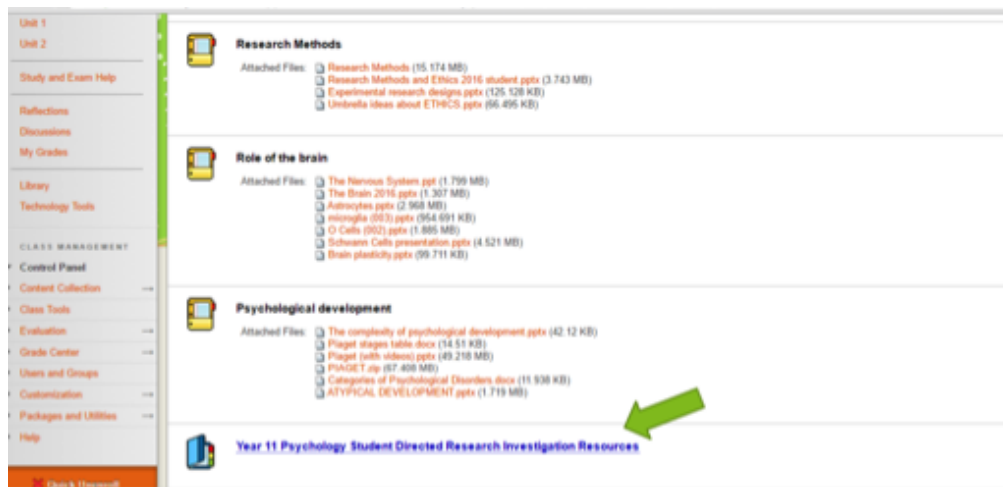

Figure #5: Using Blackboard for contextual links from course sites to library resources.

Teacher-librarians as the information experts in the teaching team are brought into the class, or the class comes to the library, depending on whether the resources are all digital or a combination of both hard copy and digital. Learning about information use is powerful when teachers bring into discipline learning experiences explicit awareness of the particular information processes and literacies that apply to that discipline.

Blackboard also enables creation of modules for particular collections of subscription databases, shown in Figure #5, which can then be linked to from course sites, or incorporated as part of the course sites – the source module is updated as needed and that is reflected wherever it is incorporated.

Figure #6: Library databases 'gathered' into Blackboard modules for ease of use and access.

The Spydus catalogue search module sits seamlessly within the Homepage, but is also directly accessed from the School's Intranet portal, from where links are made directly to resource modules created within Blackboard. Spydus enables students:

- to search across our hard copy and digital collections
- to be directed to their physical or online locations
- to drill down to particular resource types using the facets at the side.

Figure #6 demonstrates how we have 'collectionised' the usual Dewey order into particular arrangements to suit the way the school curriculum works.

Figure #7: Using the Spydus catalogue to direct users to collections on shelves.

Using the *empathise > ideation > prototype > test* process of design thinking, we experimented in our old library to change our arrangements of spaces, furniture, shelves and books. We wanted to release our students from the squash of traditional library stacks as they searched so they could experience the books as part of their class learning, which is the main time they use them, explained further in Figure #7. So we now have 'rooms' with 'bookwalls' around the edges, and classes come to sit together surrounded by the resources they need to learn the subject. It has been immediately more successful.

Figure #8: Non-fiction collection space arrangement to reflect the curriculum.

Arranging fiction collections for independent access and use

To achieve the fiction reading experiences we want also requires that the online and physical collections are brought together by expert systems so students can undertake their own discovery and selection. This independence helps build the confidence that leads to enjoyment of reading, which in turn leads to more time spent reading – and then on to the improved achievement outcomes reported by PISA.

Our fiction resources and spaces have been designed to provide experiences of

- sustained silent reading
- reading across genres at increasing levels of complexity of language and concepts

- independent browsing and selection of quality fiction in hard copy and digital format.

We have 'genrefied' because we feel it is counterproductive to expect students to find books in genres they like by browsing for often unfamiliar author names in the traditional A to Z shelving arrangements. The expert Spydus library system also helps users find their way across the physical genre collection arrangements, shown in Figure #8.

Figure #9: Spydus system directs users to genre collection locations.

Most of the collections we use for our Wide Reading program have been divided up into genre arrangements, as shown in Figure #9. We are not sure whether these will be the best, so it is a process of testing to see what works best for students. Already we find that it makes it easier for students to find the books they want by browsing, and to introduce students to genres they have not tried before.

Graphic	Fantasy	Humour
Manga	Dystopian	Historical
Picture Books	Science Fiction	LOTE
Movies from Books	Gothic	Classic
Biography/ Autobiography	Action	Relationships
World Cultures	Detective	Popular Journals
Senior Fiction	General	General Journals

Figure #10: Wide Reading Genres.

In our Wide Reading program our students establish home reading plans, we keep track of what they are reading and encourage them to read across the genres and to try progressively more challenging narratives.

Design thinking for experiences to build information use and reading capacity

Increasingly, research about plasticity of the brain and how neural pathways are established recognises both the mental and physical aspects of learning experiences. Design thinking at our school library says that we need to design learning activities that provide students with experiences of particular ways to address the distracting challenges of both the amount and nature of online information. Chiefly, these are experiences of:

- using expert systems to find and use quality information for innovative and creative learning in each discipline area
- building capacity for sustained immersion in increasingly complex subject concepts and terminology.

Once we design these learning activities, they need to be applied and data gathered about whether the learning intentions are successful, and further, how students experienced the activities we designed (see Figure #10).

Figure #11: Design thinking for learning experiences to build information and reading capacity.

We can use our expert systems to gather and report on the success of our learning activities, including gathering student voice about how they experienced them. Learning achieved via our programs and spaces can also be reported into places which have real impact, such as subject reports and to senior management teams (Figure #11).
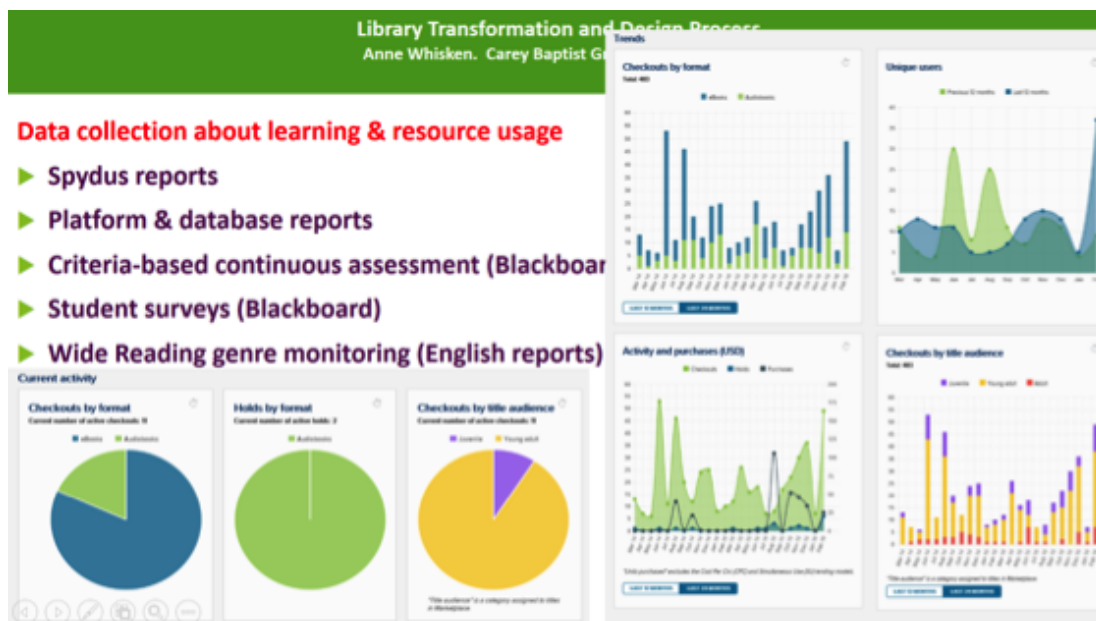

Figure #12: Data collection about learning and resource usage.

Ongoing Action Research to bring attention to our spaces, collections and expertise

Now we are established in our new space, we are undertaking ongoing participatory co-design (Hughes, 2015) to promote our new space and collection arrangements, using:

- high quality promotional material about spaces, collections and services
- genre categories in Spydus catalogue to provide for genre collection development and display, and clear research results
- directional maps and signage to lead users to locations of fiction genre collections and non-fiction collections.

The library team members have used design thinking in many of the projects to develop ways to promote the library and bring attention to its spaces, collections and services. Three projects are outlined below by their designers.

Project One: High quality promotional material about spaces, collections and services
Sia Yannopoulos, Library Technician eResources

Problem: What signs and locations will best promote the Library and how might they be produced?

- ***Ask*** – Define the problem: design promotional material and signage
- ***Imagine*** – Generate Ideas: Literature banners (printed on canvas for bookwall display spaces), weekly promotion of collections, Top Ten titles, Literature Festival posters, *Bright Sign* information screens around school, welcome and opening hours signs, PERMA Rooms, Carey Café, 'How to Borrow' *PowerPoint* converted to *MP4*
- ***Plan*** – Select a solution: *Adobe InDesign CC2017* – Industry standard for desktop publishing, flyers, posters.
- ***Create*** – Make the item: Saved on 'S'Drive, also exported as PDF and jpg (smaller files for sharing)
- ***Test*** – Evaluate the item: Input from teacher-librarians and library staff from junior school
- ***Improve*** – Make needed changes: save updated versions
- ***Share*** – Present the results: Laminated posters on walls and in display stands, promotion on information screens, Daily Bulletins/ Messages delivered to staff and student inboxes with hyperlinks (including canned search to Spydus OPAC & Location, Collection), Announcements page on ClassE (Blackboard) Library Homepage
- **Feedback** – Parent phoned after a 'meet the mentor' night to ask for links to Top Ten titles. His response: 'Great, a really good resource to help kids find a book to read, and it helps parents contribute to discussion about good books to read'

Figures #13 and #14: Using Adobe InDesign CC2017 for promotional posters.

Project Two: Genre categories in Spydus catalogue to provide for genre collection development and display, and clear search results
Liz Campbell, Library Technician – Cataloguing

Problem: *How to break down the collection 'GRAPHIC NOVELS' into further sub-sections to make them visible in the catalogue and on the shelves?*

Ask: How can we break the large and confusing collection into smaller, clearer divisions for easier access?
Imagine: Teacher-Librarian Marg Moran found an example at St Leonard's school where they have their graphic novels arranged by genre, and she took the library staff for a professional development visit to 'All Star Comics', which also uses genre arrangements. After studying these examples we decided to create genres which we felt best suited the ways our staff and students use the library and also to reflect the way sub-genres would link into curriculum directions. For example:

- one of the genres we chose is Graphic Novel Adaptations because a multimodal unit of Year 7 English requires students to read a book which has been adapted.
- we observed that students tended to browse the graphic novel section and rarely used the catalogue. They tend to be fans of either graphic novel labels DC or Marvel, or they preferred Manga. Students were inclined to follow a particular series but also to follow characters such as Superman or Batman.

Plan: The graphic novel sub-genres we selected:

- Adaptations – graphic novel adaptations from the screen or novels. We also included titles that were graphic novels first and were later adapted into film or TV, such as Dan Clowe's *Ghost World*.
- Classic Comics – popular well known series that have stood the test of time, such as *Tin Tin*, *Asterix*, *Garfield*, *The Simpsons*.
- DC and Marvel – titles published by those labels.
- Indie – titles with themes not typical of the usual comic book super hero. Also historical and educational types of graphic novels.
- Manga – titles defined as manga (Japanese graphic novels that read from right to left).
- Senior – graphic novels that contain content more suited for years 9 and above because they may be considered to have violent imagery or sexual connotations and therefore cannot be borrowed by younger students.

***Test*:**

- We decided to change the spine labels so the prefix indicated the genre e.g., ADA for adaptations, IND for indie etc.
- The suffix was changed to indicate either the author or the character, such as BAT for Batman, or in adaptations of literary classics, the author of original work rather than the graphic novel was used, e.g., the graphic novel adaptation of Hamlet has a suffix of SHA for Shakespeare.
- We felt this would group graphic novels together on the shelf in the way our students would want to browse through them.
- To create better visibility in the OPAC, notes were added to bibliographic records, such as adding corporate author headings, e.g., DC Comics and Marvel, and also linking various series.

***Share*:**
All the collection apart from Manga has now been reclassified and relabelled. Observation shows that students approach the section confidently, and books stay together on the shelves so students don't have to waste time sorting to find the sub-genre they want. It is a work in progress, and we are constantly reviewing what works best.

Figure #15: Breaking up the Graphic Novels genre into sub-categories for easier browsing experiences.

Project Three: Directional maps and signage to lead users to locations of fiction genre collections and non-fiction collections.
Linden Carroll, Library Assistant

Problem: *We have developed the catalogue search results to indicate collection and shelf location, but users are unsure where in the physical library these items might be found.*

- ***Ask*** – How can we make the library collections approachable, reducing the intimidation factor, while also making sense of a collection that is spread across many levels in a not-so- Dewey manner?
- ***Imagine*** – What tools might work? Maps and signs are a good first step. What sort of size, colour use, saturation of signs, etc., are wanted? What might this look like to a user? What sort of tools, particularly in terms of staffing, do we have?
- ***Plan*** – What design tool would I be comfortable using? I decided Word would satisfy my needs and let me get straight to the working instead of fiddling around with new software. I'm new here, so what more do I need to know about the space and the collections? Time to hang out in the collections with rough sheets and plan, plan, plan! I noted the DDC of each shelf and what collection colours existed.
- ***Create*** – Working on the rough hand sheets, get the logistics right first. Then on the document, get the structure of the map/sign to a point you can work with, then input the logistics (what call number/genre

goes where, which ones are we highlighting), and then work with Dewey classification to define titles and phrasing from that angle. Match map colour coding with spine label colour coding, match DDC signs to both.

- **Test** – Each map/section of the library was presented to the Teacher-Librarians to go over, with their knowledge of Carey's collection development, curriculum foci, and patterns of use. They again walked around the library with my prototypes in hand, and wrote notes and adjustments and suggestions.
- **Improve** – I took these notes and applied them to the prototypes, and this went back and forth with smaller and smaller tweaks until we were all comfortable with the results, meaning the TLs had a copious amount of emails titled 'Labels – Final!' and 'Labels – Reworked!' in their inboxes during this period.
- **Share** – When we were comfortable with the products, we pinned up the maps, placed the signs on their shelves, left the discarded A4 maps on display to be picked up by students, and watched students use them! Immediately, students were using the maps, for finding resources, discovering new areas of the library, and just seeing what the brightly coloured blocks were representing! We had already printed, laminated, and put the non-fiction maps around the library when one of the TLs remarked it actually needed a bigger display for better clarity, so we went through the print/laminate/distribute cycle a second time! And I'm glad we did, as A4 is much too small for a displayed sign. But it's the sort of thing you don't think of until you have it up!

Figure #16: Collection location map for Fiction Genres.

- As a result, we now have maps and signs to make the library more visible to users – more approachable, navigational, and comprehensible. Future ideas might include linking the collection maps to the catalogue links, and some of the shelf signs will likely be reworked over time. Library visibility is always a work in progress!

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