Crossing literacy and informed learning boundaries with Manga

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Biographies

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In practice, informed learning fosters simultaneous learning about using information and learning about a topic. Thus, information is a transformative force that extends beyond functional information literacy skills.

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Abstract

This research investigated high school students' experiences of informed learning in a literacy development workshop. It was conducted in the library of an Australian high school with a low socio-economic population. Building upon students' fascination with Manga fiction and artwork, the workshop was part of a larger university–community engagement project, *Crossing Boundaries with Reading*, which aimed to address widespread literacy challenges at the school.

The paper first provides a brief literature review that introduces the concept of informed learning, or the experience of using information to learn. In practice, informed learning fosters simultaneous learning about using information and learning about a topic. Thus, information is a transformative force that extends beyond functional information literacy skills. Then the paper outlines the phenomenographic methodology used in this study, the workshop context and the research participants. The findings reveal three different ways that students experienced the workshop: as an *art lesson*; as *a life lesson*; and as *an informed learning lesson*. The discussion highlights the power of informed learning as a holistic approach to information literacy education.

The study's findings are significant as students from low socio-economic backgrounds are often at risk of experiencing disadvantage throughout their lives if they do not develop a range of literacies including

the ability to use information effectively. Responding to this problem, the paper provides an empirically based example of informed learning to support further research and develop professional practice. While the research context is limited to one high school library, the findings are of potential value for teacher librarians, educators and information professionals elsewhere.

Introduction

Information empowers. In today's information society, it is necessary for people to navigate through boundless information, and more importantly to use it effectively for work, educational and personal purposes (Beheshti & Large 2013). Young people who lack the ability to effectively use information are at particular risk of social and economic disadvantage (Britz 2004). In order to survive and thrive, young people need to be *informed learners* with well-developed reading literacy who are also able to use information critically, creatively and wisely to learn (Bruce 2008). Informed learning offers a holistic approach to information literacy development that prompts learners to reflect on their information using experience and then apply their associated learning in new ways and contexts (Bruce 2008).

This paper reports on a study that explored how high school students, from a predominantly low socio-economic population, experience informed learning within the context of a school library-based Manga workshop. The workshop was part of a larger university–community engagement project at the school, entitled *Crossing Boundaries with Reading* (CBWR). As its name suggests, the aim of CBWR was to enable students with critically low literacy

to cross educational, social and economic boundaries by developing their reading and digital literacy (Hateley, forthcoming). The CBWR program centred around students' fascination with reading and creating graphic novels, including Manga (a Japanese comic style) that has successfully driven other programs targeting traditional literacy skills in disadvantaged youth (Schwarz 2007).

After a brief literature review, which introduces the concept of informed learning, the paper outlines the phenomenographic methodology used in this study. It then sets the research scene by introducing the workshop organisation and participants, describing how the Manga artist facilitator encouraged students to imagine themselves trapped in the library during a zombie apocalypse. Their problem-solving challenge was to use information available in the library to develop strategies to survive the zombie invasion. Explanation of the data collection and analysis process leads into the presentation of key findings, which reveal that students experienced the workshop variously: as an *art lesson*; as *a life lesson*; and as *an informed learning lesson*.

As the concluding discussion indicates, the findings demonstrate the power of informed learning as an approach to information literacy education that focuses simultaneously on learning to use information and learning about a topic. They also highlight the importance of identifying and addressing variations in how students experience the process of informed learning in a practical workshop context.

The study's findings are significant as students from low socio-economic backgrounds are often at risk of experiencing

disadvantage throughout their lives if they do not develop a range of literacies, including the ability to use information effectively. Responding to this problem, the research provides an empirically based example of informed learning to support further research and develop professional practice. While the research context is based on a small sample of participants in one high school library, the findings may have potential value for teacher librarians, educators and information professionals elsewhere. In providing insights about the ways in which young people use information to learn, the findings support the planning and implementation of future workshops that aim to develop a range of literacies amongst students from disadvantaged communities.

information literacy capabilities that enable them to use information critically.

There is an apparent relationship between student achievement and socio-economic status of the area in which a school is located (Thomson, DeBortoli & Buckley 2012). In Australian schools, the performance of students in the poorest schools is on average three to five years behind those in wealthier schools (Thomson *et al*. 2012). This can manifest in limited information literacy skills, which lead to significant social and educational problems, as those who are unable to access and apply information effectively are often described as suffering from information poverty. Information poverty leads to 'a situation in which individuals and communities, within

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Literature review

Teenagers operate within a dynamic information environment where information is continually produced and shared, and information boundaries are constantly shifting (Mackey & Jacobson 2011). As the flow of information continues to grow, there is an ever-increasing need for teenagers to be able to successfully navigate through this world of information, both for their immediate needs and to enable them to enjoy successful adult lives (Wilms 2003). Although young people are often considered to be effective users of digital technologies, they appear to lack more developed

a given context, do not have the requisite skills, abilities or material means to obtain efficient access to information, interpret it and apply it appropriately' (Britz 2004, p. 192). This is a particular problem for less advantaged youth with limited access to information technologies, or little support in developing information literacy (Lloyd, Lipu & Kennan 2010). The problem might intensify for young people from backgrounds that are prone to information poverty, such as ethnic minority groups or low socio-economic households (Partridge, Bruce & Tilley 2008).

Information literacy is broadly defined as the ability to find, evaluate and apply

information across digital and non–digital platforms (ALIA 2006). However, focusing on practical skills alone may not enable young people to critically and creatively use information at a level required for education and work. For example, there is an assumption that, if students are provided with suitable information and communication technologies (ICTs), they will have an inherent ability to use technology in sophisticated ways, accessing and applying information effectively (Combes 2009). However, young people who are

texts, and enabling independent learning (Williams & Wavell 2007).

Informed learning (Bruce 2008) extends thinking and practice of information literacy. Grounded in research into educators and learners' experiences (Bruce 1997; Lupton 2008; Maybee 2007), *informed learning* is a pedagogical construct (Bruce & Hughes 2010) that frames using information as a part of learning about a subject, rather than a set of skills to be learned separately. At the core of informed learning is the idea

Simply having the skills to access information via a digital device does not mean that an individual has become an informed learner. From the informed learning perspective, technology is potentially both a barrier to effective use of information as well as a tool for empowerment

often classified as 'digital natives', due to a constant use of digital tools, typically lack 'digital wisdom' (Prensky 2012). They may not have a well-developed *information awareness* to become active agents in this space, evaluating and asking questions of information, as well as responding to questions and sharing information that they have modified or produced (Mackey & Jacobson 2011). This is essential, as learners' abilities to use information have been shown to relate to how comprehensively they understand the subject they are studying (Limberg 1999). Compounding this problem, secondary school teachers have suggested that curriculum constraints may prevent them from adding lessons intended to enhance their students' awareness of the more complex aspects of information literacy, such as drawing new meaning from using information, comprehending

that 'information gives form and shape, gives organising power, gives life, animates, figures and fashions learning as well as imbuing learning with vitality' (Bruce & Hughes 2010, p. 3). In an informed learning approach, lessons and assignments are designed to enable students to meet subject-focused learning outcomes through intentional engagement with information (Hughes & Bruce 2012; Maybee, Bruce, Lupton & Rebmann 2013).

Simply having the skills to access information via a digital device does not mean that an individual has become an informed learner. From the informed learning perspective, technology is potentially both a barrier to effective use of information as well as a tool for empowerment, dependent upon whether the user has the knowledge to find and apply the information they require via technology

(Bruce *et al.* 2012). Therefore, informed learning moves the learner's focus away from technology to a holistic awareness of using information to learn (Bruce, Hughes & Somerville 2012).

Methods

This qualitative study addressed the research question: *How did students use information to learn in this workshop?*

We used phenomenography to reveal the different ways that the Manga workshop participants experienced the same phenomenon of *informed learning* and how those different experiences are related (Marton 1981). Phenomenography has been applied extensively to research student learning in the classroom (Marton, Runesson & Tsui 2004). In addition, it has been frequently used to study how information literacy is experienced in various contexts, such as religion, health and higher education (Gunton, Bruce & Stoodley 2012; Yates, Partridge & Bruce 2009; Lupton 2008; Maybee 2007). Phenomenographic theory suggests that learning occurs when learners experience an object of study (such as zombie invasions) for a particular lesson or workshop in a new way and they become aware of select features of that object. Students may become aware of the features that are critical for understanding the object when a teacher focuses on and varies those features (Marton, Runesson & Tsui 2004). There are four types of variations that enable learning:

- *Separation* involves highlighting one or more parts of an object of study. For example, the concept of genre may be focused on as a feature of writing.

- *Contrast* is when two or more features are compared. Becoming aware of the

genre of journalistic writing may involve comparing it to other genres, such as scientific reports or blog entries.

- *Generalisation* refers to experiencing different instances of the same feature. A learner may realise that an editorial piece may be an article published in a magazine or a video segment delivered by the announcer on a television news show.

- *Fusion* refers to one or more features being focused on simultaneously. For example, 'microblogging' is a genre of writing that fuses the feature of blogging (making online logs or posts) with the feature of very brief amounts of text.

When researching classroom teaching and learning, phenomenographers investigate how features of an object of study are:

- intended to be varied by a teacher or facilitator,

- varied during the enacted lesson, and

- discerned by the students after the lesson (Marton, Runesson & Tsui 2004).

For this research, the object of study was the way students were able to develop a plan for saving the world from a zombie invasion by drawing from information in the library. We examined the relationship between the facilitators' intentions for the workshop, what students were exposed to during the workshop, and the students' awareness of using information. In this way, we identified different ways in which the students used information to learn and elements of their world-saving plans.

The Manga workshop and participants

The research took place at a large high school in a low socio-economic community

close to Brisbane, Queensland, Australia. The high school has a socially and culturally diverse population of 1800 students, of whom about 6% are Indigenous and 25% are from non-English-speaking backgrounds (ACARA 2014). Many students in this school have low to critically low literacy. In the National Assessment Program — Literacy and Numeracy (NAPLAN) test, which is administered to all Years 3, 5, 7 and 9 students throughout Australia, this school's students generally performed at below or substantially below average in reading, persuasive writing, spelling, grammar and punctuation levels when compared to national benchmarks (ACARA, 2014).

The research focused on a CBWR workshop, which was entitled *Zombie Apocalypse* and facilitated by the:

- Manga artist (workshop designer and lead facilitator)
- CBWR project leader
- CBWR project assistant (a qualified teacher librarian)
- school's teacher librarian.

The workshop offered an informal, creative learning opportunity for students on a voluntary basis. While it was not formally aligned with the curriculum, the workshop aimed to develop student literacies. In the workshop, the students all participated in the same activity led by the Manga artist and supported by the CBWR team members. They created and illustrated Manga stories based on the premise that they were rebuilding the world after a zombie apocalypse and had only the school library resources available to aid them. While some worked collaboratively, others chose to work alone. Thus, in line with informed learning theory, the

students intentionally learned about using information and post-apocalyptic survival.

The study participants included 41 high school students from Years 8, 9, 10 and 12, with ages ranging between 14 and 17. The gender balance was fairly equal. Although it was not possible to ascertain the socio-economic status of each student's family, the school is situated within a low socio-economic area. The Manga artist, CBWR project leader and project assistant, and the school's teacher librarian also took part in interviews. Ethical clearance to undertake the research was received from both The Queensland University of Technology (QUT) and Education Queensland. All participants provided written consent, and parental consent was also obtained for those students under 18.

Data collection and analysis

A researcher from QUT conducted the data collection and analysis. As summarised in Table 1, this focused on three parts of the learning experience: *facilitators' intentions* for students' learning, *enacted workshop* (that is, the way it was carried out) and *students' lived experiences* of the workshop. To identify *facilitators' intentions*, the researcher conducted interviews with the artist, as designer and leader of the workshop, and other members of the CBWR project team listed above. To study the *enacted workshop*, the researcher observed activities, took detailed field notes, and analysed the stories that students created during the workshop. To gain data about the *students' lived experience*, the researcher held interviews with the student participants following the workshop.

All the interviews were semi-structured, with set questions being used to contextualise

Parts of the object of study	Collected data	Data analysis
Facilitators' intentions	Interviews with the artist and CBWR program team prior to the workshop	Identify the features of the object of study and how they were intended to be varied by the facilitator
Enacted workshop	Observation of the workshop	Identify the features of the object of study and how they were varied Determine features that were critical
Students' lived experiences	Interviews with students following the workshop	Identify the critical features that were part of the students' awareness Develop categories describing the different student experiences of the workshop

Table 1: Data collection and analysis

the interview and to encourage interviewees to reflect on their experience of the object of the study (Akerlind 2005). For example, student participants were asked to explain the depictions in their storyboards, why they had created certain stories and what they thought they had learned. Open-ended follow-up questions were then used to explore and clarify in more detail the researcher's understanding of the participants' comments (Akerlind 2005). Prior to thematically analysing the data, the researcher transcribed the interviews and checked them for accuracy.

Thematic data analysis concentrated on three parts of the object of study (Table 1). Firstly, with regard to the *facilitators' intentions*,

the researcher analysed interviews with the artist and other facilitators to identify particular features and types of variations (that is, *separation*, *contrast, generalisation* and *fusion*). Secondly, with the *enacted workshop*, the researcher analysed observation notes to identify the features that were varied during the workshop, the types of variation, and which features were critical for the students to understand the lesson in the way intended. Thirdly, with the *lived experience*, analysis of student interviews revealed the critical features that the students were aware of after the workshop. These student interview data were analysed together as the students all participated together in the same workshop activities.

Findings

The students experienced the workshop in three ways, only one of which aligned with the Manga artist's intentions.

Facilitators' intentions

As lead facilitator, the Manga artist's key *intention* for the workshop was to improve literacy amongst students by passing on his belief that 'knowledge is power'. He intended students to begin thinking about how using information contributes to knowledge and to realise that reading:

> *... is not just something that I've got to do, it's something that is going to give me the ability to get a good job, get into university, do whatever my dream is* (artist).

Thus, the intended object of learning was problem solving by using information in the library within the context of saving the world from zombies. The notion of knowledge, which related to using information to accomplish something, was a *feature* that was *critical* for the students to understand in order to fully grasp the intended object of learning. In addition, centred around Manga and storyboarding, the artist intended that students would leave the workshop with enhanced drawing skills and the confidence and ability to create their own art.

Enacted workshop

The *enacted workshop* began with the artist presenting the students with a zombie apocalypse scenario that they would use to create their own stories during the day. This scenario entailed students being trapped in the school during a zombie apocalypse and then having to rebuild civilisation. In this instance, the only resources they had were library books, as digital information was assumed to no longer be accessible. During the workshop, the artist varied critical features associated with books, zombies and knowledge. From a phenomenological perspective, these variations could be described as *generalisation, separation* and *fusion.*

The artist *generalised* books as a representation of knowledge. He discussed his own love of reading and the power he had found in books, and how books and reading could help students succeed in their own lives. The artist *separated* out the features of zombies and knowledge, and attempted to *fuse* them back together for the students. He did this by asking the students to write short paragraphs about the story they would develop.

The artist then explained the concept of storyboards as a communication tool to create, for each participant, the story they had written. He elaborated on the idea of 'knowledge is power in a post-apocalyptic world'. In doing this, he *generalised* the task by describing ways people have used knowledge to survive in post-apocalyptic circumstances, such as SAS soldiers and those in the Third World who have to create habitable areas from scratch. At this point, the students started to create their storyboards, working in groups with assistance from members of the CBWR team.

The students were called together at different times throughout the day to learn drawing techniques and discuss what a zombie apocalypse would mean for civilisation. While the drawing techniques were an important part of the workshop in terms of creating a Manga story and student engagement, from the phenomenographic

perspective, they were regarded as non-critical features of the lesson.

Lived experiences

Table 2 outlines how the students *experienced* the workshop in one of three different ways, namely: as an *art lesson*; as a *life lesson*; and as an *informed learning lesson*.

Art lesson

Students who experienced the workshop as an *art lesson* saw it purely from the perspective of enhancing their drawing skills, that is, they were focused on the technical skills learned. They felt that the workshop was mainly about:

drawing … to help us learn about how to draw Manga and anime. (Participant 3)

While students showed some awareness of the artist's idea that 'knowledge is power', they tended to see it as being personally relevant information. For example, the knowledge was meant to 'help keep me safe during a zombie apocalypse' (Participant 1), rather than as a message about the knowledge held within library books and how information can be transformational.

The students experiencing the workshop this way were slightly overwhelmed by the amount of information that they were given at the beginning of the workshop and unsure of how to use the information to develop their stories:

Sometimes it was a bit hard to follow all the different information and use it all. (Participant 1)

These students often produced detailed or long storyboards, but were focused on the art rather than a cohesive story. The understanding of the group who experienced the workshop as an *art lesson* was focused on getting the details correct and following instructions rather than understanding the meaning of the information that was presented to them. This group appeared unaware of the way that they were using the information that was presented to them to create their stories, instead believing that 'we just used our head' (Participant 1).

Art lesson	Life lesson	Informed learning lesson
Engaged with subject content (Manga art and zombies), building traditional literacy skills	Engaged mainly with subject content (Manga art and zombies), but also understood the higher order concepts such as knowledge as power, which led them to improve functional information literacy skills	Understood subject content (Manga art and zombies), but also understood the link between the higher order concept of knowledge is power, and the way they use knowledge to solve problems in their own lives, thereby developing as informed learners

Table 2: Students' lived experiences of the workshop

Life lesson

Students who experienced the workshop as a *life lesson* focused on the message that the artist gave to them about knowledge. In this experience, students also paid attention to the art and the technical skills they had learned, but understood at a deeper level the message about information as power that was being presented to them. These students saw the workshop as being about:

> ... *how important books are, if a zombie apocalypse actually happened where you would find everything.* (Participant 2)

to understand both the message that 'knowledge is power' and how they themselves applied information. When discussing the workshop, some students talked about using 'books' (Participants 4), not only in the context of saving the world from zombies, but also how they use them all the time to learn in their daily lives.

Students with this experience were aware of how they could use information to transform their lives, that is, they were aware of the ways in which they were using the information being presented to them. They

> *Students who experienced the workshop as an informed learning lesson understood it as a lesson in technical art skills, but also a lesson about the importance of information. This suggests learning applicable beyond the workshop, as students became aware not only of what information they need, but how they use information to learn.*

In this experience, students were still focusing on simply taking the information from the workshop and applying it to their work, rather than interrogating the way that they use information. One described the process in the workshop as 'took it [the information] and made a story" (Participant 2)*. While they showed some understanding of the 'information as power' idea, this did not transfer into thinking about the ways they used information. Instead, they were purely focused on the subject content 'to make us understand that the things we take for granted are actually really important' (Participant 2) and unaware of the way they use information to learn.

Informed learning lesson

Students who experienced the workshop as an *informed learning lesson* attempted

were also aware of how they could apply this information and techniques they were using in other situations. In interview, they discussed being able to apply techniques they used to English and Social Science lessons. For example one talked about the storyboard as:

> ... *a visual aid of what you think and then you describe it from the drawing.* (Participant 3)

Some students described the storyboard as a tool to understanding information in a variety of situations. This group of students was aware of both the subject content of the workshop, the technical drawing skills and workshop message and, importantly, appreciated how to apply the information being given to them, and how they could use information in other situations.

Discussion

These findings presented an innovative approach to enabling students to use information to learn. Drawing from youth culture (like Manga), the workshop activity stimulated informed learning among students with limited literacy. The Manga artist's intentions for learning were achieved to varying degrees in enhancing students' literacy as well as their understanding of the power of information. This supports the view that an informed learning approach is likely to enable students to use information with more versatility in other learning contexts (Bruce 2008), not only other workshops, but in personal and school activities as well.

The findings highlight variations in the way students experienced using information to learn in the workshop. Creative workshops, like this one, can keep students engaged, while fostering informed learning. However, not all the students who participated in our research experienced the workshop as an *informed learning lesson*. The three different student experiences of the workshop provide insight into how the focus of the workshop might be shifted in future to enable more students to experience informed learning.

Associated with these variations in experience, students' learning outcomes were also varied. The students who experienced the workshop as an *art lesson* concentrated on detailed drawings of the zombie apocalypse. During the workshop they were engaged in reading and comprehension in order to understand and complete the task. For these students, the workshop provided an opportunity to develop basic literacy skills. In contrast, the students who experienced the workshop as a *life lesson* focused on the subject content of the lesson. They did not experience the simultaneity of informed learning, whereby attention is focused both on the subject content and the way information is used. These students could be seen as moving towards developing functional information literacy skills (ALIA 2006) during the workshop, such as defining an information need (instructions for growing crops), locating and accessing information (finding the books in the library) and using information to accomplish a specific purpose (feed society after the zombie apocalypse). In developing functional information literacy, the students were learning basic information skills, but were unaware of how they could apply what they learned to other educational tasks.

The students who experienced the workshop as an *art lesson* or as a *life lesson* did not relate their own information practices and the concept of 'knowledge is power' to contexts outside this particular exercise. By contrast, the students who experienced the workshop as an *informed learning lesson* picked up on the implicit message within the workshop, understood the link between drawing upon knowledge gained to solve problems and extended their capacity for using information to learn. Students who experienced the workshop as an *informed learning lesson* understood it as a lesson in technical art skills, but also a lesson about the importance of information. This suggests learning applicable beyond the workshop, as students became aware not only of *what* information they need, but *how* they use information to learn.

Subsequent review of the workshop indicates opportunities for further development. In particular, during the workshop, the students were continually exposed to the idea that 'knowledge is power' and the value

of information. However, there was limited explanation of the relationship between knowledge and information or opportunity for students to reflect on the implications for their real lives beyond the zombie fantasy. Further support for student reflection might have enabled them to deepen their awareness of their own information-related experiences (Hughes, Bruce & Edwards 2007). For example, it might have been possible to extend students' experience of the workshop from *an art lesson* or *a life lesson* to *an informed learning lesson* by encouraging them to examine the types of information they were using as well as how were using them to complete workshop tasks. The students could also have been asked to reflect on how they might apply these approaches to using information to learn in other situations. Building on this idea, the artist could then have asked students to consider how their approach to using information to learn in the workshop may empower them in their future lives.

For teacher librarians and other information professionals and educators, the findings provide insights for enriching and extending information literacy practice. Moving beyond functional information skills, there is scope to explore with students the potential of 'knowledge as power' in their formal learning and personal lives. A holistic informed learning approach would enable students to understand that knowledge is created through using information in multiple ways that include sourcing, organising, critiquing, decision-making and communicating (Bruce 1997). In other words, using information to learn is not limited to using popular digital technologies, but rather it can be a creative and challenging process that involves inquiry, problem-solving and discovery of new ways of thinking and doing.

Conclusion

This research investigated students' experiences of informed learning in a workshop that was part of the CBWR project. The workshop met the key goals of the CBWR project in that it was successful in engaging students and promoting literacy through Manga artwork and storytelling. While the intended experience of the workshop was not to explicitly show students how to use information to learn and create informed learners, the findings show that the students all developed some new information awareness. They experienced this in three differing ways: as *art lesson*, *life lesson*, or *informed learning lesson.* However, the overall message of the workshop that knowledge is power was most clearly understood by students who experienced it as *an informed learning lesson.*

The findings highlight how students who experienced the workshop *as an informed learning lesson* gained more from the workshop than other students as they were able to understand the way that they were using information and how they could apply this to other areas of their lives. Future workshops designed according to informed learning principles might further enable students from disadvantaged backgrounds to become informed learners in ways that successfully impact their future academic and personal lives.

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