

Journal of Information Literacy

ISSN 1750-5968

Volume 14 Issue 1

June 2020

Project report

Yap, J. M. and Peñafior, J. 2020. The amazing library race: Developing students' media and information literacy skills through games. *Journal of Information Literacy*, 14(1), pp. 66–82.

<http://dx.doi.org/10.11645/14.1.2708>



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The amazing library race: Developing students' media and information literacy skills through games

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Abstract

In this time of disinformation and misinformation, libraries remain a reliable source of truthful and factual information. As they fervently support the agenda of lifelong learning, libraries recognise that there are various influences that redefine the process of student learning. Admittedly, librarians need to be more creative in motivating post-millennial students to help them fully develop their Media and Information Literacy (MIL) skills.

This paper explores how games are adopted and utilised by academic libraries as an interactive approach to entice students to learn essential MIL competencies. It shows how games can be a viable tool not only to deliver information literacy (IL) instruction in a collaborative learning environment but to also effectively engage and attract students to use the library resources and services. While the use of games is not novel, the way it is delivered and re-purposed to meet MIL competencies is vital for today's young generation of learners. This report demonstrates how two academic libraries in the Philippines and Kazakhstan were able to embed MIL skills through a library race challenge. Furthermore, this paper discusses the practical steps undertaken in the preparation of the game as well as the observations made during and after the activity was conducted. From this, other libraries may gain insights and best practices on how to leverage this method to further champion MIL in their own communities.

Keywords

academic libraries; games; information literacy; Kazakhstan; media and information literacy; Philippines; problem-based learning; student engagement

1. Introduction

People today have access to diverse internet sources and they need not rely on traditional media for information. Along with the huge opportunity offered by access to online sources, also comes risks related to their engagement with media such as online disclosure of personal

information and cyberbullying. Media literacy (ML) education provides youth with the knowledge, insights, skills and attitudes needed to reap the benefits of their media use as well as to protect them from potential harm (Meeus et al., 2014).

The internet, the presence of social media and the internet of things (IoT) accelerated the generation of large quantities of data and information (Ekbja et al., 2015). The advancement in digital technology has allowed many people to become not just consumers of information but creators of information. As a result, the web has become abundant with information, both true and fraudulent.

With the widespread increase of disinformation and misinformation, libraries have positioned themselves as one of the champions of media and information literacy (MIL) which is perceived as a powerful antidote to this growing concern (ALA Public Programs Office, 2017; Batchelor, 2017; Haasio et al., 2018). Libraries have already established themselves as a primary source of factual and reliable information and strong advocates of academic integrity within and beyond the walls of their respective institutions. Librarians continue to play a vital role in teaching and honing the essential competencies needed by students to navigate the vast sea of media and information (Crockett, 2018; Will, 2016).

In this quest to help create competent and life-long learners, libraries are faced with challenges posed by the emergence of new technologies and new generations of learners. Users' expectations and learning behaviours have changed requiring a more dynamic and engaging teaching strategy. Libraries recognise the need to constantly innovate practices, offer relevant programmes and update services to keep up with the new demands and trends. In developing the competencies of students and focusing on MIL, librarians have to be creative to capture the attention of students by making learning more fun and interactive, thus making MIL programmes successful.

Over the years, libraries have adopted various methods and strategies to effectively teach MIL. Examples of such methods are orientation sessions, one-shot classes in collaboration with academic staff, and subject-specific training and workshops which increase the core MIL skills of students. Teaching strategies may take the form of active learning, which promotes deep understanding of the topic (Johnson & Barrett, 2017). Particular strategies include using realia, word walls, cooperative learning and story re-enactment (Tran & Aytac, 2018). Gamification and game-based learning (GBL) are two methods that have recently gained popularity and have been used in workplace training, education and social media settings (Pho & Dinscore, 2015). Both employ game elements to teach a specific skill or promote a desired behaviour. Findlay (2016) states that the main difference between the two is the integration of game mechanics with training content. At their core, both approaches support learning through play or learning by doing. In fact, games of all stripes have long been of interest to educators as a way to engage and motivate students to learn new concepts and apply their knowledge in a meaningful context (Chmiel, 2019).

This paper presents the practices of two academic libraries in Asia – Philippines and Kazakhstan. The De La Salle University (Manila) and Nazarbayev University (Nur-Sultan), both university libraries, have adopted a game-based strategy to promote and teach MIL in their respective service communities. This paper shares a practical approach by which students can

learn while they are having fun. It also discusses the different steps undertaken in the preparation of the game as well as observations made during and after the activity. From this, other libraries may gain insights and best practices on how to leverage this method to further promote MIL in their own communities.

2. Review of related literature

Libraries endeavor to create programmes that are interactive and engaging and gamification of library instruction appears to address the said objectives. Games increase literacy skills, boost motivation, increase engagement and promote mastery learning of content (Kingsley & Grabner-Hagen, 2016). Students are more likely to give their attention when there is a game that excites them. Whatever kind of game it is, for educational or competition, they are eager and motivated to try it (Martinez-Garza et al., 2018).

Gamification, a term first used in 2008 by Brett Terill as *gameification* (Tröndle, 2017), has gained widespread popularity, adaptation and application in various fields including business and education. In her report entitled *Gamification – Does it lead to higher motivation?* Tröndle (2017) articulates the difference between play and game. According to her paper, playing is a free form that shows improvisational behaviour while gaming is 'characterized as playing with rules and determined goals' (p. 4). Karl Kapp (2011) gave it a more extensive definition stating:

game is a system in which players engage in an abstract challenge, defined by rules, interactivity, and feedback, that results in a quantifiable outcome often eliciting an emotional reaction (para. 1).

Kaneko et al. (2018) clarified that there are two instructional methods used in GBL. One is a serious game where a learner needs to play the game eventually leading to learning a specific knowledge or subject. As Boyle et al. (2011) mentioned, every learner acquires a new skill when they play serious games by enhancing their current knowledge. It also reinforces the knowledge they get while playing the game (Wiggins, 2018). The other method is gamification. Gamification is a GBL approach where the mechanics of the game is similar to a serious game but mimics a certain task specially created to suit the purpose of promoting learning and solving problems for non-game environments (Walsh, 2014).

Gamification is not just about points and rewards. It is essential that users see the meaningful content and real value in the exercise. It is 'about making an application or a task more fun, rather than actually stimulating playfulness' (p. 1). It also promotes social interaction and participation among participants (Muntean & Nardini, 2015).

GBL involves 'borrowing certain gaming principles and applying them to real-life settings to engage users' (Trybus, 2015, as cited in Pho & Dinscore, 2015, para. 1). This approach provides students with the chance to explore and experiment with research skills without fear of failure or bad grades. GBL also provides an opportunity to increase student engagement by making the experience fun (Pho & Dinscore, 2015).

Another approach to handle library orientations or IL sessions is through problem-based learning. Boss et al. (2015) introduced a new style in library instruction called the Amazing

Library Race (ALR). ALR was used to replace the traditional library orientation providing instructions and problem-solving tasks to better understand the collections and services of the library. Students should be able to finish a challenge by responding to a specific task or question (Boss et al., 2015). Participants of the race can't proceed to the next level if they don't successfully finish a task. This is like an upgraded scavenger hunt where students need to search, evaluate, retrieve, cite information sources and identify library-related services and programmes. Scavenger hunts concentrate on one task only while library race integrates several challenges to finish a race.

Gamification, GBL and problem-based learning have been utilised by academic libraries in order to engage students when teaching MIL skills. It is likely they will continue to employ such approaches to make learning more meaningful and valuable.

3. Methodology

This paper employs the illustrative case study method to discuss the ongoing practices of two academic libraries in Asia. This method is descriptive in nature and typically utilises one or two instances of an event to show what a situation is like (Colorado State University, 2019). In this paper, although the academic libraries are geographically far from each other, they use the same strategy to engage students to be more interactive, participative and collaborative.

3.1 MIL components

The study adapted the three MIL components identified in UNESCO's *Global Media and Information Literacy Assessment Framework: Country Readiness and Competencies* (2013).

The MIL components are the following:

1. Recognizing the demand for, being able to search for, being able to access and retrieve information and media content.
2. Understanding, assessment and evaluation of information and media.
3. Creation, utilization and monitoring of information and media content.

These components were used to test the practical aspects of the race challenges. The participants of the race are all university students at undergraduate level. The outcomes will be provided in the results section of the paper.

4. Cases in Kazakhstan and Philippines

4.1 Case from Kazakhstan

Kazakhstan claims to be the first Central Asian country to recognise the importance of MIL (Akhmetova & Shorokhov, 2018). Initial traces of MIL events happened in Kazakhstan in partnership with non-governmental organisations such as IREX Europe and international organisations such as UNESCO. As early as November 2015, a five-day course on MIL was sponsored by UNESCO Almaty which focused on freedom of information (UNESCO, 2016). UNESCO's Almaty cluster office continued the promotion of the importance of MIL for libraries and its users through a conference in 2016 held at Kazakh National University (UNESCO,

2016). The following year, IREX Europe provided MIL training for teachers and librarians at Kimep University and in the regional libraries of Kostanay and Kyzylorda (IREX Europe, 2017).

In January 2018, Nazarbayev University hosted another round of MIL seminars for librarians in Nur-Sultan (formerly called Astana) (IREX Europe, 2018; Yap & Manabat, 2018). Two more MIL events happened in Nur-Sultan in the latter part of 2018. It was a back-to-back activity held at Nazarbayev University comprising a workshop in piloting an MIL curriculum based on the UNESCO recommendations (UNESCO, 2018) followed by the MIL Week Forum (including the first MIL Day) at Nazarbayev University (Nazarbayev University Library, 2018). In addition to these events, the Media and Information Literacy Curriculum for Teachers was also translated into Kazakh (UNESCO, 2018).

Various Information Literacy (IL) focused programmes also started in Kazakhstan. For instance, Nazarbayev University offered an IL programme for its students in 2011 after its opening in 2010. Currently, the reference department of the Library has been working to create subject-specific modules that focus on effective ways of searching for information, evaluating sources and managing the retrieved information by citing and referencing them properly to avoid plagiarism. The Saken Seifulin Kazakh Agrotechnical University conducted a study among university students, including Master's and PhD students, and surveyed them about their IL awareness and programmes within their academic life (Akylbayeva et al., 2018). Results of the study revealed that a high number of students surveyed (89%) agreed that IL was effective enough to help them understand the need for information and how to process it by using a systematic approach.

Kazakhstan has also participated in a trans-regional project funded by Erasmus+. This is a capacity building programme for higher education institutions known as the DIREKT (Developing Trans-regional Information Literacy for Lifelong Learning and the Knowledge Economy) project, which supports the country's goal to standardise higher education curricula through the Bologna Process. The aim of this project is to develop the IL competencies of librarians and teachers, and create curriculum modules that may be used by Russia, China and Kazakhstan (Akhmetova et al., 2019; Cavanagh & Kirby, 2017).

4.1.1 Integrating GBL in IL sessions

Since July 2018, free and online GBL program have been integrated into some of IL sessions. Examples of cloud-based learning tools, also called student-response systems (SRS), are Kahoot, Mentimeter and Socrative. For instance, one subject librarian is using Mentimeter (Figure 1) to make their presentation active and lively and to capture the attention of students before they become bored.



Figure 1: Mentimeter leaderboard (reproduced with permission of the subject librarian)

GBL enhances student participation and engagement, especially if they are shy to speak (Bawa, 2019). Mentimeter is an easy to use interactive software that enables librarians to create questions and lets students compete with one another.

Several studies which discuss the possible enhancements of teaching and learning through online audience-response systems like Mentimeter are available (Mayhew, 2019; Skoyles & Bloxsidge, 2017). GBL can be both about designing serious games which aid learning discovery (White, 2017) and integrating game-based student response systems like Mentimeter or Kahoot. It is just like a game show which builds critical thinking, judgement and reasoning (Wang, 2015). Although game-based student response systems may not be as experiential as a simulated game, SRS has its own learning process to get initial feedback and knowledge consolidation (Licorish et al., 2018). Leibiger & Aldrich (2015) opted to use Socrative for their study, another free online tool that allows creating of polls, games, quizzes and classroom assessment technique (CAT). This tool supports anonymous data collection and stores data in individual accounts and may be exported through e-mail or computer download using an Excel spreadsheet.

4.1.2 InfoLit race as a problem-based learning activity at NU Library



Figure 2: InfoLit race poster, licensed under [CC BY-SA](https://creativecommons.org/licenses/by-sa/4.0/)

The Library InfoLit Race was introduced at Nazarbayev University Library in 2018 and the library designed promotional materials to encourage participation (Figure 2). A series of tasks are carefully conceptualised to develop the IL skills of the students. The main objectives are to increase their competencies in searching for reliable information, evaluating scholarly resources, developing ethical principles by learning how to cite and reference materials and other IL components necessary to becoming a lifelong learner. The race is open to all interested students and prizes are given to the top three teams. Below are sample activities we ask our students to finish in line with the objectives of the MIL components.

Table 1: InfoLit race challenge vis-à-vis MIL components

MIL Component	MIL subject	Pit Stop Challenge
<p>1. Recognizing the demand for, being able to search for, being able to access and retrieve information and media content.</p>	<p>Definition and articulation of a need for information</p> <p>Search and location of information and media content</p> <p>Access to information, media content and media and information providers</p> <p>Retrieval and holding / storage / retention of information and media content</p>	<p>Everyone has a class!</p> <p>Gives the students an idea on how library books are classified and arranged on the shelves based on subject or discipline. In this task, students must be able to arrange the books in order of class number. Also, they need to identify which class number each discipline belongs to.</p>
<p>2. Understanding, assessment and evaluation of information and media.</p>	<p>Assessment of information and media content, and media and information providers</p> <p>Evaluation of information and media content, and media and information providers</p>	<p>Don't plagiarize is a task where students need to understand and assess every situation. A set of paraphrased texts are written and they need to agree if they need to cite these texts based on common rules.</p> <p>Also, they need to re-arrange the right location of every component of a reference list using APA style.</p>
<p>3. Creation, utilization and monitoring of information and media content.</p>	<p>Creation of knowledge and creative expression</p> <p>Communication of information, media content and knowledge in ethical and effective manner</p> <p>Participating in societal-public activities as active citizens</p>	<p>Chat with me! Is a task where students should apply courtesy in communicating while asking for a request. In this task, the librarian will ask them to find research information using the library portal and they should be able to provide the correct answer.</p>

These pit stop challenges are just parts of the many challenges included within the race.

4.2 Case from the Philippines

In the Philippines, the Republic Act No. 10533 which is also known as the Enhanced Basic Education Act of 2013, mandates the integration of MIL in the curriculum for senior high school students. This MIL component has two main objectives. First, it is intended to help the students to gain a basic understanding of media and information as channels of communication and tools for the development of individuals and societies. Second, it is intended to develop students to be creative and critical thinkers as well as responsible users and competent producers of media and information (Republic of the Philippines, Department of Education, 2013).

With the inclusion of MIL in the core curriculum, students are expected to have the essential MIL competencies as a result. And since libraries are considered to be a primary source of reliable information in a range of media formats they now play a crucial role in developing MIL competent learners through their programmes and initiatives.

4.2.1 De La Salle University Libraries

De La Salle University (DLSU), located at the heart of Manila, is one of the leading universities in the Philippines and is the lone private university in the country to be included in the Times Higher Education (THE) university ranking. It is a private Catholic university founded in 1911 by the Christian Brothers. It has eight colleges and schools, 36 academic departments and a student population of about 16,500 undergraduates and postgraduates (De La Salle University, 2019).

The DLSU Libraries belong to the academic support services group and their primary role is to provide information and instructional support to the academic community. As part of its services, it maintains several programmes such as community engagement, Human Library, Lunch and Learn, and IL that are designed to fulfill the key aims of the library and are aligned to the strategic goals of the university. The DLSU Libraries are consistently at the forefront of providing worthwhile programmes that stimulate lifelong learning to all of their stakeholders (Yap et al., 2017).

4.2.2 lamInfoSMART amazing race at the DLSU Libraries

In 2013, the DLSU Libraries launched its IL campaign dubbed as lamInfoSMART: Making Every Lasallian Information Literate. This was in response to a Philippine Accrediting Association of Schools, Colleges and Universities' (PAASCU) recommendation calling for 'creative awareness about the availability of the user education programmes to other research-oriented classes' (Del Mundo et al., 2014, p. 52).

The word SMART is an acronym that stands for: seek for the right information, manage retrieved information effectively, assess information critically, reference information sources correctly and treat and apply information ethically. While the general description of the programme appears to focus on IL alone, in practice, the scope has expanded and evolved to include ML which is evident in the different activities within the programme.

The IAmInfoSMART campaign is held annually during November to coincide with the Library and Information Services (LIS) Month (Proclamation No. 837 s. 1991). IAmInfoSMART takes a gamified approach to promote MIL. The interactive exhibit features five different daily games and each one addresses the SMART learning goals. Aside from that, there are games adapted from popular TV game shows (local or international) such as Celebrity Bluff, Are You Smarter Than a 5th Grader and the Amazing Race. The campaign also holds contests online to promote various social media platforms of the library.

The Amazing Race is one of the main events during the IAmInfoSMART campaign (Figure 3). Based on the reality TV series, the contest leads the teams to different sections of the library and perform various tasks in a race against other teams. The goal of this activity is to test the familiarity of the participants with DLSU library services and their skills in finding, evaluating and using information in its various formats by going through each pit stop challenge.



Figure 3: The IAmInfoSMART amazing race 2013 poster, licensed under [CC BY-SA](https://creativecommons.org/licenses/by-sa/4.0/)

The race is open to students and staff and each team should have three members each. Each year there are around 8 teams or 24 participants in all. The IAmInfoSMART Committee members serve as the marshall and look after the players in each task. They hand over the clues and ensure that each task is performed well before the players continue to the next challenge.

The challenge revolves around the different knowledge and skills expected from library users, such as familiarity with different resource types, ability to find and use different library services and facilities and adeptness in managing and evaluating various media sources.

Table 2: IAmInfoSMART amazing race pit stop challenges vis-a-Vis MIL

Component	MIL Subject	Pit Stop Challenge
<p>1. Recognizing the demand for, being able to search for, being able to access and retrieve information and media content.</p>	<p>Definition and articulation of a need for information</p> <p>Search and location of information and media content</p> <p>Access to information, media content and media and information providers</p> <p>Retrieval and holding / storage / retention of information and media content</p>	<p>Sample 1.</p> <p>Out and About</p> <p>Can you find:</p> <p>Filipino musical instrument</p> <p>Movie on DVD</p> <p>Board Game</p> <p>Magazine</p> <p>Thesis</p> <p>Found everything? Present the materials to the Pit Stop Marshall to claim your points.</p> <p>Sample 2. (Figure 4)</p> <p>Online Scavenger Hunt</p> <p>Get a head start by answering the following questions quickly and correctly by browsing through the Library’s website. Find a computer available.</p> <p>What is the DLSU Libraries’ email address?</p> <p>What does LORA stands for?</p> <p>What is LORA’s mobile number?</p> <p>Identify 2 Reference Services provided by the Libraries.</p> <p>Name 2 electronic databases that the Library is subscribing to.</p> <p>Name 1 ebook database that the Library has.</p> <p>What is the Twitter account of the DLSU Library?</p> <p>Give the correct answers using Chat with LORA service to move to the next challenge</p>
<p>2. Understanding, assessment and evaluation of information and media.</p>	<p>Assessment of information and media content, and media and information providers</p> <p>Evaluation of information and media content, and media and information providers</p>	<p>Don’t Fake it! (Figure 5)</p> <p>Congratulations, you’ve reached the final task.</p> <p>Fake news. You hear this phrase quite often these days. You probably even read or saw one (or two).</p> <p>The highlight of this year’s IL campaign is our interactive multimedia exhibit that aims to fight fake news – showcasing useful tools and tips on how to spot and get rid of</p>

Component	MIL Subject	Pit Stop Challenge
		<p>satirical, biased and fake information.</p> <p>For your final task, visit this exhibit and see if you can successfully identify fake news. When you're done, head to the Finish Line!</p> <p>Detour Challenge</p> <p>A detour challenge means that each team gets to pick 1 of the two tasks available.</p> <p>Tic Tac Toe or Mixed-Up Citation Game?</p> <p>To avoid plagiarism, always cite your sources. Let's test your citation skills. Which game would you take?</p> <p>Citation Tic Tac Toe</p> <p>Click on a square to launch a question. Answer correctly and win the square. Incorrectly identify the citation and you lose the square.</p> <p>Mixed-up Citation</p> <p>Drag and drop the pieces to correctly format either APA or MLA citations. Do the APA and MLA book format.</p>
<p>3. Creation, utilization and monitoring of information and media content.</p>	<p>Creation of knowledge and creative expression</p> <p>Communication of information, media content and knowledge in ethical and effective manner</p> <p>Participating in societal-public activities as active citizen.</p>	<p>Copy Face</p> <p>Aside from books, the Libraries has a significant collection of Audio/Visual materials which users can check out for home use.</p> <p>You will find a selection of DVD covers in the Pit Stop. Let your creativity flow and re-create the scene in the DVD cover of your choice.</p> <p>Have somebody take a photo and send your photo to library@dlsu.edu.ph</p> <p>Subject: <Team no.> Copy Face</p> <p>Show your photo and email to the Pit Stop Marshall to claim your points.</p>

Table 2 shows challenges given to teams that cover some of the MIL subject and competencies. Each challenge is designed to demonstrate a specific skill. Aside from measuring the participants' knowledge and ability, the challenge also allows participants to learn if they are not yet familiar with the task. This task not only test the students' skills in identifying

where to locate information, it also informs the student about the different channels of communication of the libraries as well as the different resources available to them.

Figure 4 illustrates a challenge that measures participants' ability to search, locate and access different information sources. This is one of the basic skills of an MIL competent person - the knowledge of various sources and formats of information resources. Figure 5 shows one of the challenges that gauges participants' ability to determine fake news. In this challenge, actual articles that have been published online are shown to each team and they are asked to determine whether the articles are trustworthy and reliable or not.

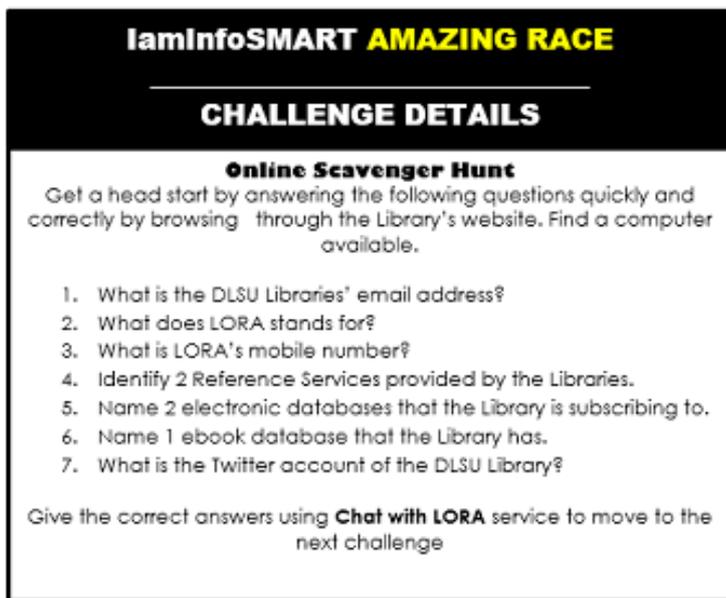


Figure 4. Sample IamInfoSMART amazing race challenge on finding and accessing information, licensed under [CC BY-SA](https://creativecommons.org/licenses/by-sa/4.0/)

The Amazing Race game appears to be an enjoyable experience to the participants as it combines both physical and intellectual challenge to them. While teamwork is also a factor, it is observed that participants who regularly visit the library and use the libraries' resources were able to finish most of the tasks faster than those who don't. The library's goal to offer a fun, interactive and engaging way to teach students MIL skills is achieved through the Amazing Race.



Figure 5. Sample lamInfoSMART amazing race challenge on identifying fake news, licensed under [CC BY-SA](#)

5. Conclusion and recommendations

Libraries continue to explore creative and varied ways to increase student engagement when providing instruction sessions – whether these are technology or non-technology based. Problem and GBL like the Library InfoLit Race (Kazakhstan) and Library Amazing Race (Philippines) provide libraries with the opportunity to make learning interactive, fun and meaningful for the students. Through these games, the library is able to integrate various IL competencies that students should be able to acquire and understand.

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