

ورشة عمل في المعرفة المعلوماتية للمعماريين دراسة حالة

نجدد المؤمن دانة الفرخان

ملخص: تعد هذه الدراسة حالة طبقت بهدف تطوير برنامج لمحو الأمية المعلوماتية في كلية الهندسة المعمارية بجامعة الكويت. وكان الهدف من البرنامج هو تطوير مهارات الحصول على المعلومات لدى طلاب المرحلة الجامعية (البكالوريوس) من خلال استخدام الألعاب الذهنية. اتخذ البرنامج شكل ورشة عمل لتحديد إذا ما كان يمكن تحسين المهارات البحثية من خلال حل بعض الألغاز، وأطلق على اللعبة اسم «المخبر المعماري»، وأثبتت نتائج الدراسة أن تلك الألعاب تعتبر وسيلة فريدة من نوعها لتعليم مهارات البحث عن المعلومات، ويستفيد منها ويستمتع بها كل من الطلاب وموظفي المكتبة. وقد أظهرت نتائج المسح أن أغلبية من شاركوا في ورشة العمل - تقريباً - لم يكن لديهم معرفة بكيفية استخدام «جوجل الباحث العلمي» إلى أن شاركوا في عملية البحث عن المعلومات من خلال حل الألغاز الذهنية. وأظهرت النتائج أن الغالبية العظمى من الطلاب الجدد شاركوا في ورشة العمل قد استفادوا منها وأبدوا رغبتهم في الحصول على ورش عمل مماثلة على أن تطبق على نطاق أوسع على جميع المستويات الأكاديمية وجميع التخصصات.

المصطلحات الأساسية: المعرفة المعلوماتية - التدريب - الألعاب - الهندسة المعمارية - الكويت - جامعة الكويت - الطلبة.

Architects' Information Literacy Workshop: A Case Study

*Nujoud AL-Muomen **

*Dana AL-Farhan ***

Abstract: This paper reports a case study in which an information literacy program was designed for use at the College of Architecture, Kuwait University. The aim of the program was to use games to teach research skills to undergraduate students. The program was a workshop that was conducted to determine whether research skills can be improved by conducting similar information literacy programs that use games. The game was called Architects Research Detectives, and it proved to be an effective method for teaching research skills in which both students and library staff enjoyed participating. Formative and summative surveys showed that almost all students who attended the workshop did not know how to use Google Scholar until they participated in the activity. The results showed that the majority of freshman students who participated in the workshop found it useful and that these students would like to have similar workshops conducted on a larger scale during the course of their undergraduate education.

Keywords: Information Literacy - Orientation - Research Skills - Games - Architecture - Kuwait University - Students.

* An assistant professor at the Department of Library and Information Science, College of Social Sciences, Kuwait University. E-mail: nujoud-almuomen@ku.edu.kw

** An Information Specialist in charge of running the Architectural Learning Resource Center at the Faculty of Architecture, Kuwait University. E-mail: danah.alfarhan@ku.edu.kw

1. Introduction

Information literacy is more important today than it has ever been due to the amount of information that is constantly proliferating, and to the fact that the means to access information are changing in challenging ways. More emphasis is placed on independent learning and social responsibility. Information Literacy orients students toward accessing information efficiently and effectively, evaluating that information critically and using the information accurately for lifelong learning.

Traditionally, library instruction has involved orientation and introduction to library tools; however, instructional theories have evolved over the years with the advancement of technology and library services. The library's role in education moved beyond what was previously called "bibliographic instruction" (BI) by providing behaviorist, cognitive/conceptual and humanist approaches to learning that are both contemporary and significant (Grassian & Kaplowitz, 2009).

The Architectural Learning Resource Centre (ALRC) at Kuwait University developed a research methods workshop called Architects Research Detectives during the fall semester of the academic year 2013/ 2014. Based on the responses to a survey given after the workshop, nearly 95% of the students responding found the workshop useful, and 89% would recommend the workshop to a friend. Architects Research Detectives helped establish two facts: that game-based pedagogies have a great impact on library instruction and that mystery games (otherwise known as knowledge quests) are an ideal game type for teaching research methods. The workshop is part of an Information Literacy program that is led by the ALRC. The objective of the workshop was to introduce freshman year architecture students to basic research tools and to the various library resources that are available to them in college.

Consistent with the accreditation requirements of the College of Architecture, the ALRC was established in 2002. It was only through the efforts of some professors and students that the centre was able to gradually develop its collection by means of donations. The ALRC Library started with nearly 200 books; today, its holding has increased to 800 titles of architectural books, periodicals and reference books. Meanwhile, one information professional has been appointed, and part-time student librarians and volunteers have been

assigned to help manage the library.

Moreover, the library offers a range of services to support intellectual discourse in the architecture discipline through several workshops , writing consultations, and research assistance.

The (ACRL)’s mission is to provide answers to questions that the College of Architecture formulates in its quest to find unique solutions to challenging architectural tasks. It delivers convenient access to information, literature and visual and digital resources that support professional education in architecture, and it is committed to teaching and developing research, as well as evaluative and critical thinking skills, which are vital for professional practice and lifelong learning.

1.1 Research Questions

The purpose of this case study is to explore whether research skills can be taught to Architecture students through the use of games and to assess this method’s degree of success. This was further subdivided into the following research questions that aim to test:

- 1) The efficacy of using games in a literacy program as a means in teaching Architecture Students research skills.
- 2) The suitability of a detective workshop game as a method to teach Architecture Students research skills as opposed to other conventional means.
- 3) The methodology needed for teaching architecture students relevant skills via the detective workshop .

2. Literature Review

2.1 Games and Library Instruction

Gaming is common in today’s culture, particularly among young people. It has become widespread and accessible through many platforms. Studies show that 81% of young adults (ages 18 - 29) compared to 60% of adults (ages 30 - 49) play games using their computers, mobile phones or other devices (Smith & Baker,

2011). Research has also shown that gaming has a great deal in common with Library Instruction and Information Literacy. Popular games such as Final Fantasy, Halo, Madden and World of Warcraft are believed to meet most of the ACRL Information Literacy Competency Standards (Waelchli, 2008). This is also the case with another popular video game called Portal, which incorporates elements of Information Literacy (Schiller, 2008). Many of these commercial games are used to teach information literacy concepts because they involve adventuring, looking for information, evaluating it and using it in some form (Smale, 2011).

Many students today consider library instruction to be a stale subject that is repetitive and unexciting. The results of previous research have indicated that due to students' preferences today of experiential learning and technology, library instruction needs to be innovative to be congruent with present-day learning styles. As a result, many libraries experiment with using games (either digital or non-digital) in place of the traditional library orientation session or tour (Smith & Baker, 2011).

2.2 Games & Learning Outcomes

Some of the reasons why games have gained popularity in library instruction are because they create “intrinsic motivation through fantasy, control, challenge, curiosity and completion” (Squire, 2005). The nature of most games is interactive, allowing students to perform some sort of action to receive feedback. Additionally, they encourage repeating tasks so that students can apply what they learn from failures to their subsequent attempts (Smale, 2011).

Another important characteristic of using games for teaching is the assessment factor, which is inherent in the structure of games (Ellis, 2008). Students cannot master a level without completing certain tasks first. Naturally, this allows instructors to evaluate how students are doing throughout the process, perhaps more so than through the traditional means of instruction.

2.3 Examples of Games in Academic Libraries

Utah Valley University (UVU) has created a game to introduce students to its library. Loosely based on the popular game Cluedo and on Inspector Clouseau from the Pink Panther movies, Clue was designed by UVU as a self-paced game

that should not take more than 30 minutes to complete. Students are given clues about a mystery, and acting as a detective, they have to eliminate suspects and library resources while making their way through the library building. After the game, 90% of the students who played Clue reported that they were now more comfortable navigating the library. Additionally, 92% of the students described the game as useful, and 92.3% said they would recommend it to their friends (Smith, & Baker, 2011).

Head Hunt is another mystery game, developed by The Ohio State University, in which students must follow several clues obtained by watching several videos and playing mini-games to solve the library mystery and find the missing head of a mascot hidden in the library. The objective of the game is for students to learn how to use the library while completing the hunt mission (O'Hanlon et al., 2007).

The library at Niagara University developed its own version of a mystery tour to introduce students to its library resources and services and linked the objectives of the game with the ACRL Information Literacy Standards (Kasbohm, Schoen, & Dubaj, 2006). The test results indicated that the game was successful and that students became more familiar with using the library (Kasbohm, 2006).

Librarians at Trinity University in Texas also developed a mystery game called Blood on the Stacks. The game overlapped elements of the fictional and real worlds by letting players encounter real-life game characters who happened to be the librarians themselves (Donald, 2008). Students must use a custom game website, the library site and the physical library to solve the mystery of the theft of a missing Egyptian artifact. The results indicated that 75% of the students took part in the game and that most of them reported that the game had helped them feel comfortable using the library (Donald, 2008).

2.4 Mystery Quests

In many of these mystery games and knowledge quests, students are asked to adopt the identity of a detective, a historian or a hero. Doing so exposes players to a community of practice and to a relevant set of vocabulary. Once players take on a new identity, they learn to make an "extended commitment of

self” and learn by doing (Smale, 2011). Memorizing facts also becomes easier when such facts are learned through role-playing and are used “for plans, goals, and purposes within a coherent domain of knowledge” (Shaffer et al., 2005).

It is striking how many of these libraries’ instructional programs use the analogy between library orientation and detective work. However, while many of them use a “who-done-it” context to familiarize students with library buildings as orientations, plenty of resources indicate there is a strong link between the identity and work of a detective and those of a researcher.

Both researchers and detectives must examine documents, interview people, find answers and develop with hypotheses. According to an article written by Dr. Philip Hodgson (a member of the Association for Psychological Science) the analogy goes even further. The actual knowledge, skills, experiences, methods and techniques required by both researchers and detectives are the same. Dr. Hodgson identifies five fundamental steps derived from Sherlock Holmes: understand the problem to be solved, collect the facts, develop hypotheses to explain the facts, eliminate the least likely hypotheses to arrive at the solution and finally act on the solution (Hodgson, 2011).

Following the methods of Sherlock Holmes, an investigation normally begins after a crime is committed or after a client has come for a visit (Hodgson, 2011). For a researcher, the problem may be in the form of a research topic or a question. In both cases, the problem gives the investigation a direction and a plan. Next, both the detective and the researcher collect facts. The detective relies on observations and interviewing people; the researcher reads prior reports, performs archival research and collects background information. Sometimes the researcher must also conduct interviews and observations. Dr. Hodgson advises that just as detectives should never approach data with filters based on prior expectations or assumptions, researchers also should not do so. Once the facts have been collected and explained, gaps and opportunities emerge in both scenarios that pave the way for hypotheses to be formed (Hodgson, 2011). It is thus very common for a detective to eliminate one possible solution in favor of another that seems more likely. In both cases, evidence that resists bias is crucial for resolving the problem. Dr. Hodgson believes that not all data are equal, and that both the detective and the researcher should employ tests. In the case of a researcher, this can be done through surveys, focus groups and

feedback. Finally, once a detective solves a case, he contacts the client and the police, and the culprit is arrested. The researcher, however, formulates a conclusion and offers recommendations (Hodgson, 2011).

2.5 Challenges of Implementing Games

Though the usefulness of combining gamification with education and, more specifically, library instruction and information literacy has been proven, few resources emphasize the challenges that these games can pose when they are implemented. While such games often prove useful, there are many considerations to keep in mind when planning them. Smale (2011) and many others who have written in this field point to the importance of using digital games or modifying existing commercial video games to shape their own programs. This is believed to help engage the players because the features of these games have already proven to be popular (Smale, 2011); however, this can be challenging to achieve. Toccara D. Porter from the University of Louisville is one instructional librarian who has noted that few librarians have prior experience with using games in a bibliographic instructional setting. Many problems are likely to occur; for instance, there might not be enough time to implement the games. Expanding the curriculum to include technology and non-traditional tools can also be difficult. Some games may not even provide immediate answers to the questions around which they were designed (Porter, 2012). For these and many other reasons, Toccara D. Porter advocates keeping instructional games simple and suggests that instead of surrendering traditional lecture-based practices altogether, games can run alongside these methods when traditional means need to be updated or have proven to be unsuccessful (Porter, 2012).

Many academic libraries cannot afford to give tours or orientations to the increasing number of admitted students, especially if the libraries are understaffed. Furthermore, when these tours and orientations are conducted, few students may attend because of a lack of interest in library instruction. The games movement in academic libraries offers an alternative that provides students with an active role in their learning and teaches students a variety of important skills related to problem solving, critical thinking, team work and communication.

3. Methodology

This case study adopted a sequential exploratory approach through using a triangulation of qualitative and quantitative methods. To answer the research questions, the case study data were collected from multiple sources:

- Observation;
- Documents: worksheets and manuals.
- Visual materials: creative and it captures attention visually and provide the opportunity for participants to directly share their reality (Creswell,2003, p.187);
- Focus group: oral discussions with faculty members and students.
- Pre and post workshop surveys.

3.1 Sample

52 students registered for the workshop while 43 students attended it with a response rate of 80%. Students were divided into 7 groups. Each group consisted of about 5 students. The exact number varied from those who attended on Sunday and those on Thursday. The number of students who attended on Sunday were more than those who attended on Thursday, 21 attended on Sunday & 22 on Thursday. Here is a detailed list of the number of students:

- 52 students registered for the workshop.
- 43 students actually attended the workshop divided into two days (21 attended on Sunday & 22 Thursday).
- 33 students answered the formative survey.
- 40 students answered the summative survey.

3.2 Role of librarians in the workshop

Librarians at the School of architecture at Kuwait University had two tasks to fulfill, one pertaining to the designing of a Learning Resource Center, which is an accreditation requirement for the College; the other for running the workshop. The Center has been deemed a must since the curricula involves

a good amount of research work, which necessitates adequate knowledge of research methodologies and sourcing. Given the fact that students join the College with little prior knowledge of academic research tools, the Center with its qualified staff is meant to fill this access of knowledge gap by guiding them to available library resources. The ALRC library staff designed the literacy program for this purpose and to make research not only beneficial but also fun. On the other hand, the librarians have been entrusted with the running of the information literacy program, answering students' questions and monitoring the time allotted for their case files.

3.2 The Gaming method

Problem-solving, inquiry and critical thinking are all skills that can be assessed simply by observing students in the context of a game (Kaya, 2010). These same skills and discovery-based learning experiences are connected to information literacy, which librarians are entrusted with to teach to students (Porter, 2012).

Mystery quests are excellent tools for discovery-based learning and, due to their parallels with research, can be ideal methods for teaching research. The fact that the knowledge and steps required for both solving a detective mystery and completing research work are the same makes gaming a viable option because detective work is fundamentally research work. To be a good researcher, one has to think like a detective (Hodgson, 2011).

The library staff at the ALRC developed a detective game that used clues placed throughout a manual and presented it in a two-day workshop. Students were supposed to obtain the clues on the names of architects and buildings from the pictures in their manuals. Below is a detailed account of the entire gaming process.

Each academic year, the ALRC tries to introduce new tools for lifelong learning through the library's book club, writing workshop and, most recently, the incorporation of games in place of the traditional library orientation. At the beginning of the fall semester of the academic year 2013/ 2014, the ALRC investigated the possibility of developing an Information Literacy program. Individuals from the following groups were brought together to form a team:

Library Staff

1. Team Leader

- Read the relevant literature.
- Select team members.
- Assign tasks.
- Manage time.
- Constantly look at the big picture.

Library Staff

2. Student Librarians

- Run technical tasks (graphic designing, printing, organizing).
- PR (interact with students).
- Market the workshop concept.
- Gather information.

Student Volunteers

- Artist. Assigned to convey the information literacy plan content to students in a fun and creative way to which they can relate.
- Student Ushers. On the day of the workshop, collect attendance data, and conduct the attendee survey.

Administration & Institutional Support

(Dean, secretary & admin workers)

- Grant the permissions required.
- Support the plan.
- Facilitate the necessary liaisons within the college.
- Complete all of the paperwork required for the process.
- Secure an available site and time for the workshop.

Faculty Members

- Provide input on students.
- Help optimize learning outcomes by arranging for the workshop to coincide with existing running courses.
- Support the workshop by making attendance mandatory.
- Introduce the workshop to students during class hours.

Technical (IT) Department

- Provide the workshop with the necessary presentation tools (e.g., projector, printers, scanners, speakers).
- Reserve a lab for the workshop outside working hours and ensure access.
- Make sure everything is working properly before the workshop's scheduled date.

The working team conducted a needs assessment study to determine the needs of the information literacy plan. This study took the form of an oral survey of faculty members and students. Once the information was gathered, it showed that many students were not familiar with good research habits. The results also indicated that many professors believed that research methods should be taught, ideally at the first year level.

It was determined that the Information Literacy program would take the form of a workshop on fundamental research methods and would use a mystery-themed game in cooperation with two courses that are required during freshman year (Communication 101 & Introduction to Architecture), thereby making attendance compulsory. The workshop's exercises and modules were chosen to roughly target the subject content of these courses, with a difficulty level that was appropriate for the target group.

The team also conducted a focus group and determined that the main goals of conducting this Information Literacy program were (1) to give more publicity to the Architectural Learning Resource Center; (2) to keep students and faculty up-to-date on the resources available; and (3) to create a manual to help students learn research skills.

These goals were further narrowed down into the following learning objectives:

- To understand basic concepts of academic research.
- To become acquainted with the various academic resources available in the college.
- To engage the mind in critical thinking during the research process.
- To learn how to look for information professionally.
- To earn a detective certificate at the end of the workshop, thus allowing the students to have a memorable and fun experience

Finally, workshop activities were defined and tied to the program's learning objectives.

Table 2
Workshop Activities and Objectives

Workshop Activities	Objectives ^{yes}
Introduce the following concepts: • How the Internet works & how information spreads over the Internet. • Google & Google Scholar • Databases • How library catalogs work	1. Understand basic concepts of academic research. 2. Become acquainted with the various academic resources available in the college.
How to devise search strategies	3. Learn how to look for information like a pro.
How to evaluate information online	4. Engage the mind in critical thinking during the research process.
Complete a set of detective investigations involving finding information online	5. Earn a detective certificate at the end of the workshop, thus allowing the students to have a memorable and fun experience.

Several research methods workshops run each academic year, but few students attend them, which may be due to lack of interest in library orientation and instruction or to other reasons that need further investigation. The subject is perceived as dull and tedious. It was decided that the ALRC would implement a detective game that would engage students in solving a mystery game, thereby making the subject more interesting.

The concept of the workshop is based on the similarity between research and detective work. Much like detective work, improving one's chances of finding information in research is dependent on how well one can utilize Keywords and Descriptors (which, in this case, function as clues). To find a suspect, a detective must devise a plan. For a researcher to find precise information, he must devise a search strategy.

After a 50-minute lecture on Internet research tools, students were divided into seven groups; each group consisting of 5 students was given a case file (Appendix 2) with the objective of uncovering the identity of a hidden famous architect or a building.

These case files contained clues; the clues consisted of sketches (Appendix 3), and each sketch represented a keyword. Students worked together to figure

out what these keywords were. Once the students had listed these keywords, a search strategy was produced. When these search strategies were inserted into a search engine, if done correctly, the majority of the results pointed to the identity of the hidden building or architect.

3.3 Assessment

To assess the overall success of the workshop, pre- and post-workshop surveys were distributed examining several topics:(1) whether the program had an impact on students;(2) if it had, what type of impact it was ;(3) whether the students could implement what they had learned;(4) whether they had enjoyed the experience; and (5) how the program could be improved.

The method of assessment chosen for the workshop was a quantitative one, and it provided basic statistics and information. Two student librarians were assigned the duty of distributing two student surveys during the workshop: A formative survey was distributed before the workshop content (Appendix 5), and a summative survey was distributed after the workshop content (Appendix 6).

Finally, the collected data were analyzed using Microsoft Excel. Because the sample was small, advanced analysis methods were not required. The responses were simply coded and entered into spreadsheets.

4. Results And Discussion

Based on the results of the formative survey, 94% of the students had done research in the past (Figure 1); however, more than 60% had never heard of Google Scholar (Figure 2) or used a library database (Figure 3). When asked whether they had used a library catalog instead, 78% of the students said no (Figure 6). Similarly, 73% had never used or heard of Boolean Operators (Figure 5). Wikipedia was the main resource used for student academic research (Figure 4). These results, interestingly enough and contrary to what was expected, showed that although the students had experience in writing research papers in the past, they had adopted very poor research habits. The results also illustrate that students at this academic level do indeed require training in research methods. These results are compatible with those of the study done by Smith & Baker (2011) at Utah Valley University, which found that 92 % of the students described the game as useful and that a similar percentage said that they would recommend the game to their friends.

Figure 1: Formative Survey - Research

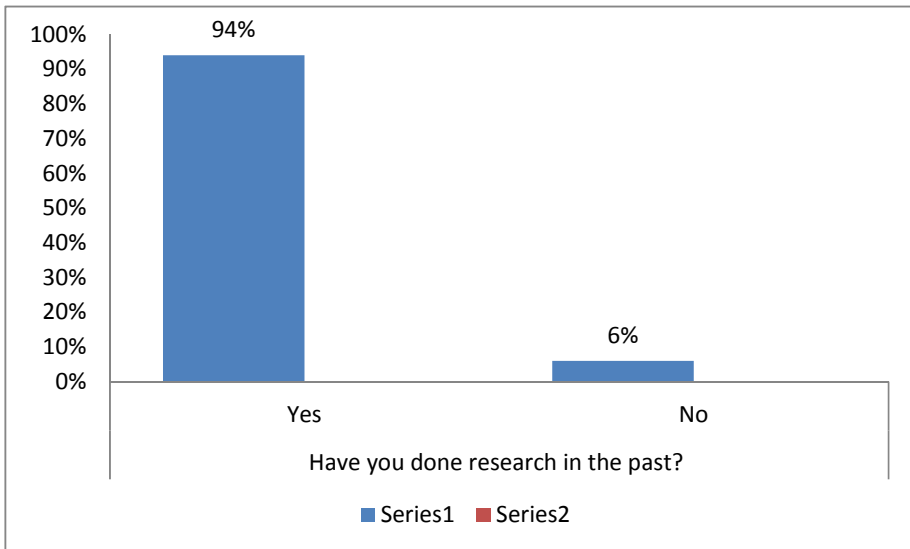


Figure 2: Formative Survey – Google Scholar

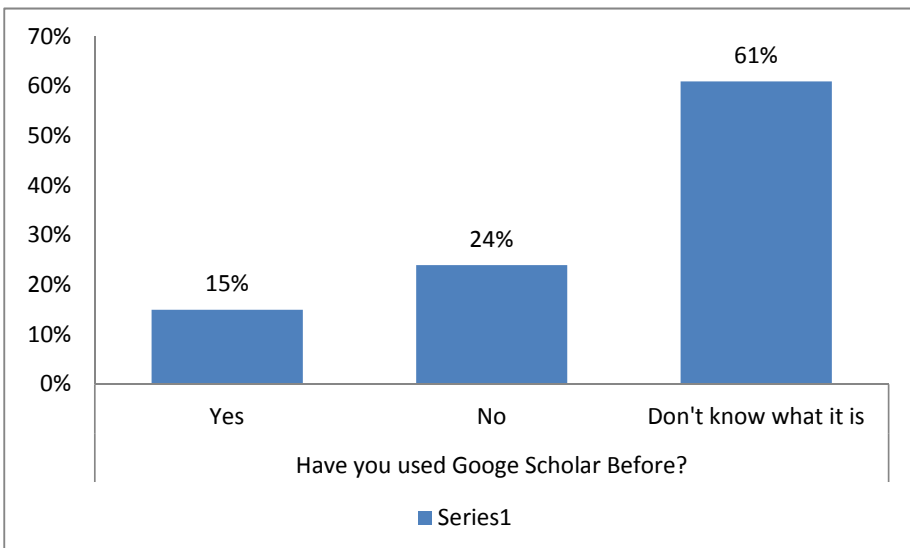


Figure 3: Formative Survey - Databases

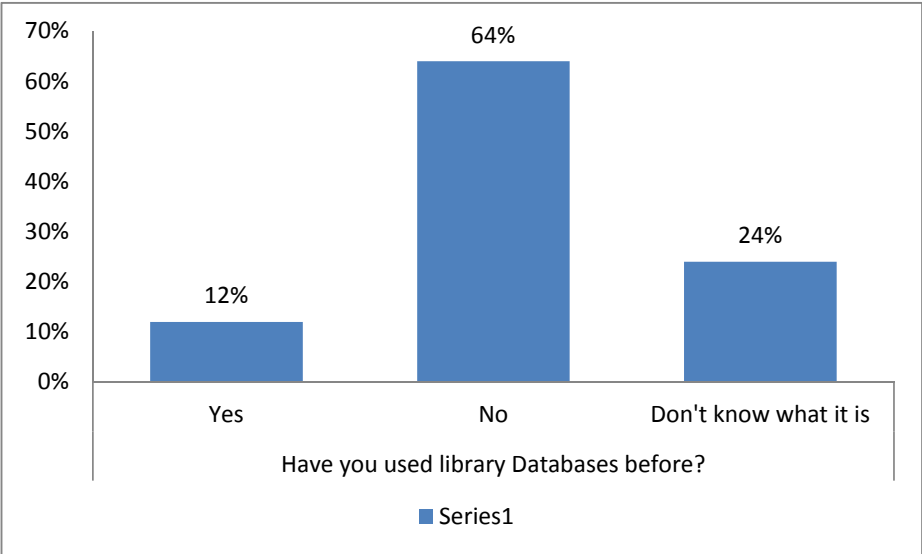


Figure 4: Formative Survey – Wikipedia

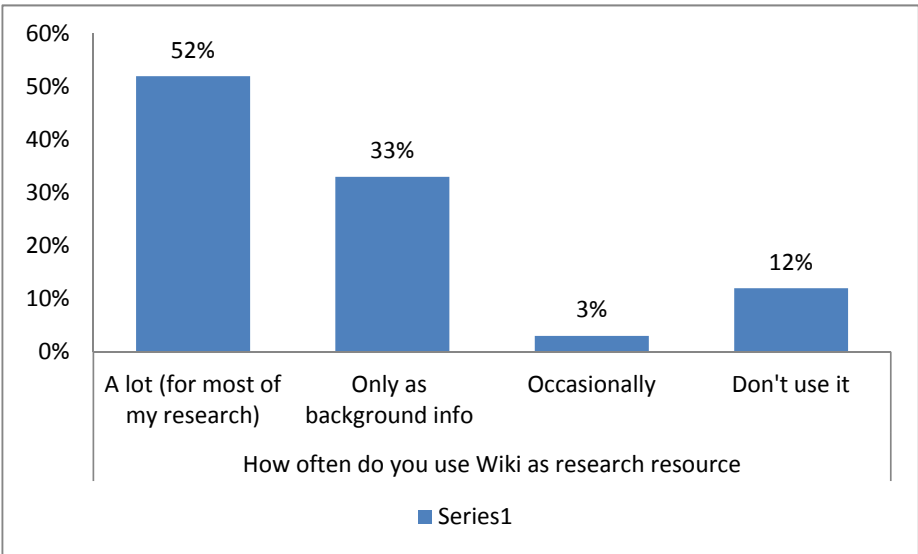


Figure 5: Formative Survey – Boolean Operators

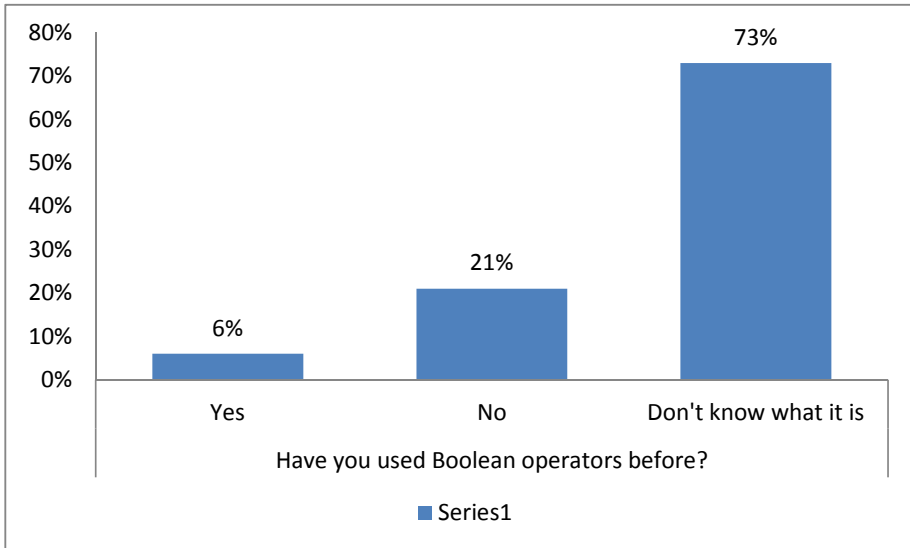
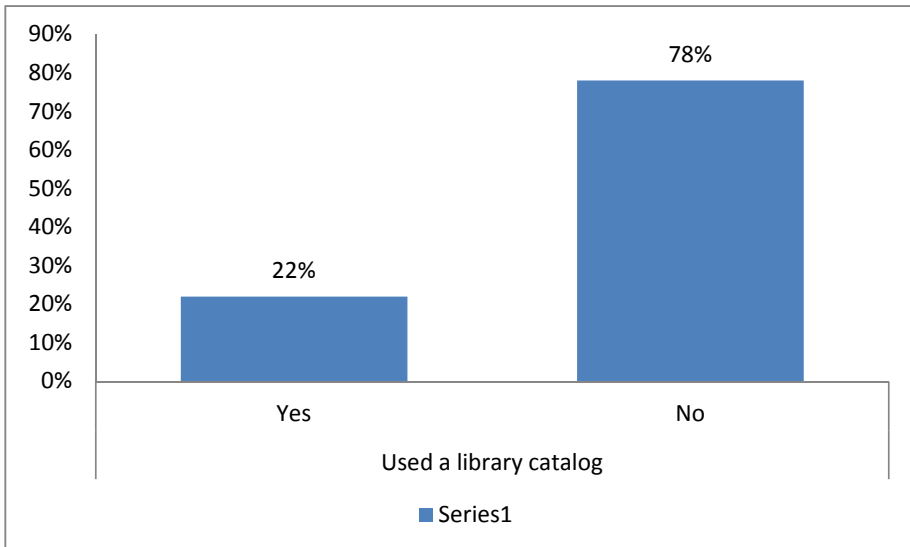


Figure 6: Formative Survey – Library Catalog



The results of the summative survey conducted after the workshop showed that 95% of the students had found it very useful (Figure 7) and that 76% would attend the workshop even if it were not compulsory (Figure 10). Furthermore, 71% of the respondents had found the instruction clear (Figure 8), and 46% thought that the activities were neither difficult nor easy (Figure 9). These favorable results suggest that students in various fields might benefit from a similar workshop aimed at enhancing their information literacy training. Similar workshops could be used in other specializations such as engineering, science, arts and social sciences.

Additionally, the results of the summative survey showed that 83% of the attendees who did not previously know Google Scholar were now familiar with it and how to use its features (Figure 13), indicating a satisfactory success rate. Similarly, 63% of the attendees who did not know how to use databases before the workshop were now capable of doing so, and 67% of the students who had not previously been familiar with using library catalogs were now able to use them (Figure 13). The results of the Boolean Operators unit, however, indicated less success, as only 50% of the students were now able to use them, whereas 42% were still not familiar with these search features (Figure 13).

These findings show that the majority of the students found the training useful and that the workshop for the most part fulfilled its learning objectives. However, several aspects of the workshop could be improved. For instance, 33% thought that the date of the workshop was not suitable (figure 12), and 22% of the respondents felt that the duration of the lecture was long (figure 11). Additionally, more instruction could be directed in the future to the areas where the lowest success rates were achieved.

Figure 7: Summative Survey – Usefulness

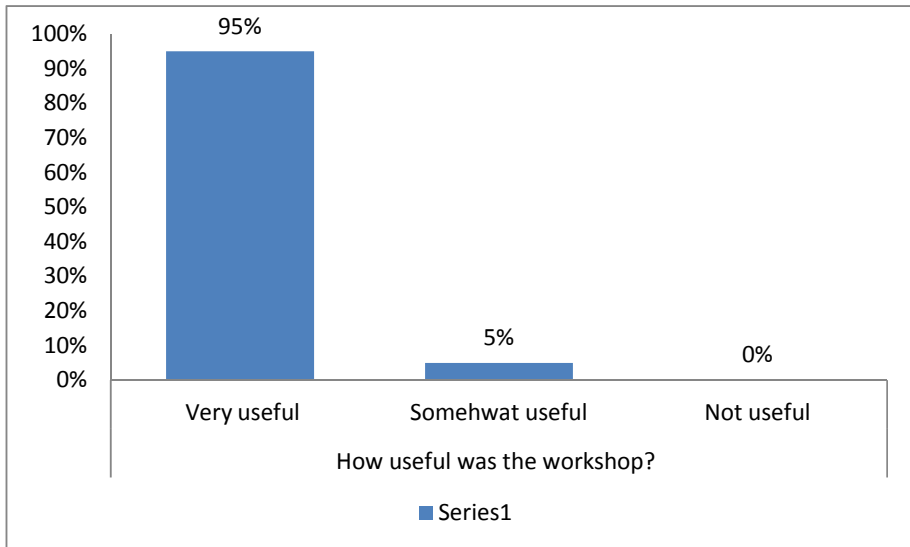


Figure 8: Summative Survey – Clarity

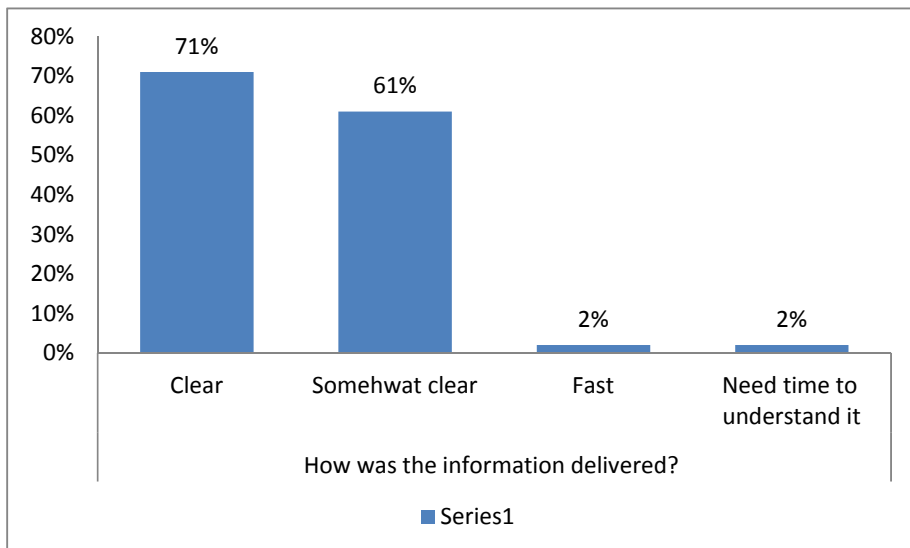


Figure 9: Summative Survey – Difficulty

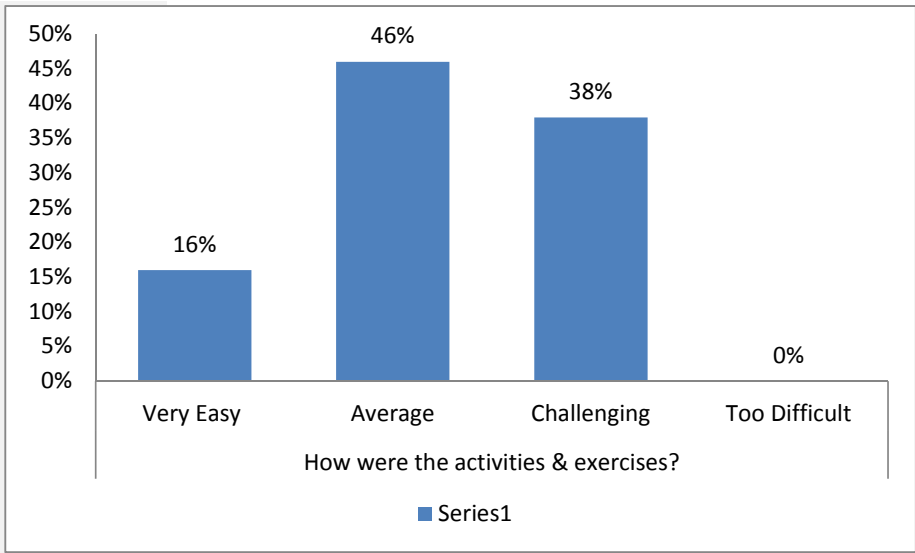


Figure 10: Summative Survey – Attendance

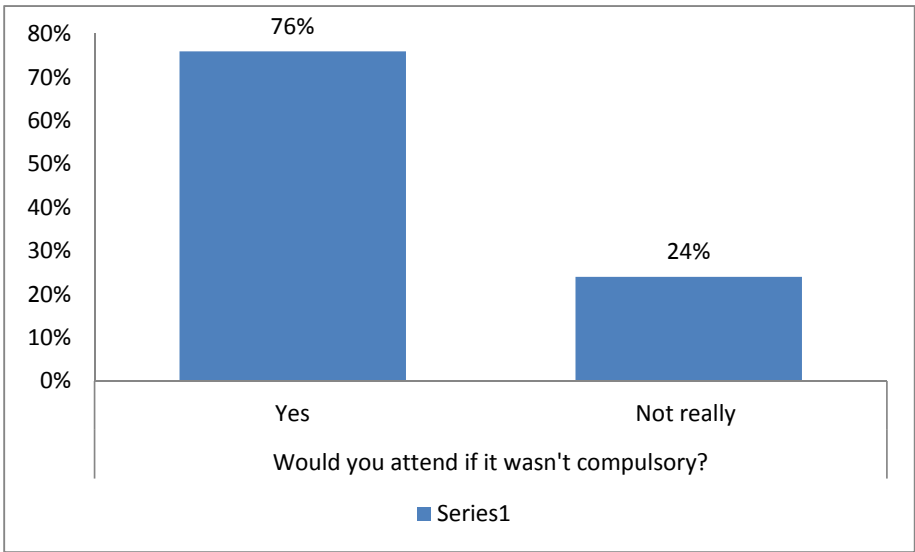


Figure 11: Summative Survey – Workshop Duration

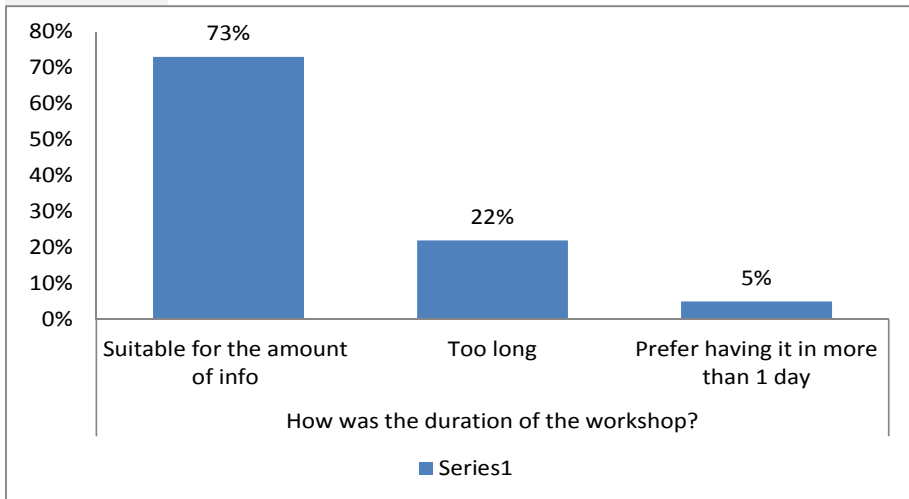


Figure 12: Summative Survey – Date

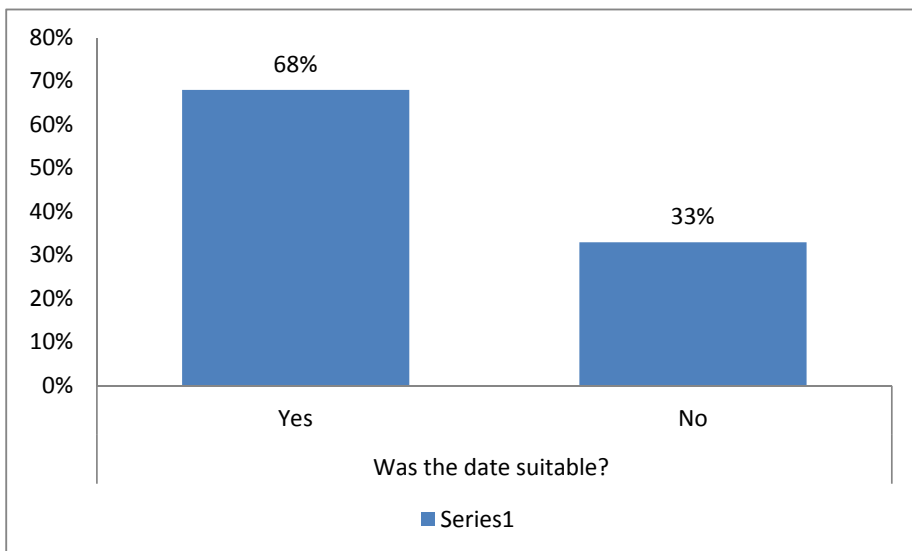
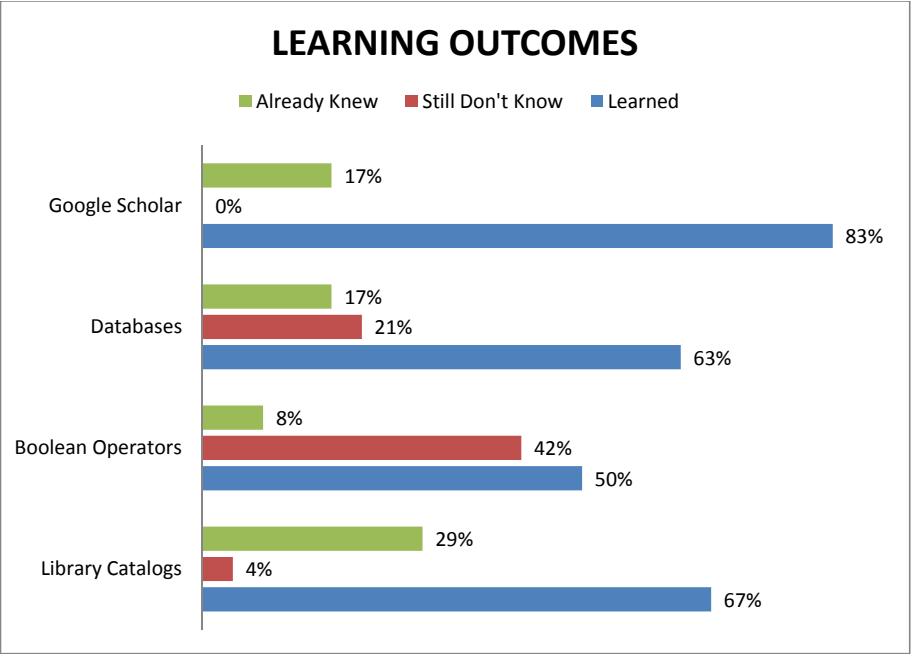


Figure 13: Success Rate



5. Conclusion

The Architects Research Detectives program proved to be an effective method for teaching research skills in which both students and library staff immensely enjoyed participating. Just as students learned new tools to aid them in their education, so did the working team behind the plan. Some of the lessons learned from this experience were as follows:

1. A library instructional game must not only be enjoyable but has to be clearly defined with a purpose that matches the learning objectives well.
2. No matter how much librarians try to keep students interested and engaged in research and library instruction, not all students will react favorably.
3. Balancing the level of instruction to suit all learners is always a challenge and requires some knowledge of both behaviorism and psychology.
4. It takes time to master a skill, and this is no different in Information Literacy programs. There is always room to improve content and build on it.

The working team behind this information literacy plan feels they could improve or try to avoid several aspects of this program prior to a second launch:

- Not all students completed both the formative and summative surveys (some could not because they left early or came late to the workshop). As a result, we feel that the response rate of the surveys was less than ideal.
- The workshop requires more marketing because not everyone was clear on the exact goals of the program.
- Due to the lack of sponsoring, grants or budgets, the workshop was not able to provide prizes for the winning team. This could have been an incentive for more students to attend.
- Some of the content needs to be updated to concentrate on the area where the lowest success rate was achieved.

Despite the issues mentioned above, both the faculty management and the library working team feel that the information literacy plan was a success. Though several research methods workshops were running at the same time by other departments on the same campus, none of them had as high an attendance rate as did Architects Research Detectives. This higher attendance may have been due to the program's good planning and incorporation of innovative information literacy methods.

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