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Project report

Personalised video instruction: A metaliterate approach to online information literacy

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Abstract

The liaison librarian to a university with a substantial and growing online learning population began using asynchronous, personalised video instruction as an online replacement for the traditional face-to-face, one-on-one bibliographic instruction reference appointment. This project was informed by the framework of metaliteracy and the 'See One, Do One, Teach One' instruction methodology utilised by the health sciences. While formal outcomes assessment has yet to be conducted, unsolicited comments from students are overwhelmingly positive, and preliminary data analysis of usage and engagement reveals several promising trends. Of all watched videos 65% were watched for the entire duration, and the liaison librarian found video creation to be less time-consuming than scheduling appointments. Providing personalised video instruction tailored to the individual student's information literacy need is a novel approach that may benefit online learners and librarians alike.

Keywords

information literacy; online learning; personalised learning; problem-based learning; US

1. Introduction

As higher education moves towards more online-only offerings, librarians must adapt traditional reference services to accommodate these learners. In a growing interconnected world, traditional information literacy (IL) options alone are not enough to empower students to become well-rounded learners. As stated by Thomas Mackey and Trudi Jacobson (2014) a metacognitive approach such as metaliteracy 'challenges a reliance on skills-based IL instruction and shifts the focus to knowledge acquisition in collaboration with others' (p.2). Librarians providing research assistance and reference instruction in an online environment are uniquely situated to aid in this metaliterate knowledge acquisition. Reference interactions are not solely focused on providing training and assistance with IL but may also include components of digital literacy, as well as the behavioural and social elements identified by Mackey and Jacobson. By interacting with librarians, students can acquire and hone these transferable skills.

At the University of Cincinnati, the liaison librarian to the College of Nursing serves a growing distance population. Technology solutions via video conferencing options such as WebEx or Skype exist to enable face-to-face interactions for one-on-one reference consultations; however, numerous difficulties were encountered with scheduling synchronous appointments. While

research has shown that students prefer synchronous online learning environments, an analysis of online learning outcomes in both synchronous and asynchronous environments has 'suggested that both types of lectures are effective in delivering online instruction' (Skylar, 2009, p.82). More recent research demonstrates the positive impact of synchronous interactions, but the logistics of co-ordinating international time zones and personal schedules with the availability of librarians is a major difficulty (Clark, Strudler, & Grove, 2015). To combat this growing problem, the liaison librarian began assisting student researchers through asynchronous, personalised video instruction.

1.1 Background

Comprehensive literature searches were conducted in the library science, health sciences, and education literature. Numerous resources demonstrated the efficacy of web-based tutorials, specifically video, as a teaching instrument. Zhang (2006) remarked on the impact of video to 'enhance students' visual literacy as well as their ability to think, learn and communicate through visuals' (p.301). Henderson and Phillips (2015) detailed promising responses to video-based feedback. McLean and Dew (2006) provide several case studies of distance learning library instruction highlighting web, television and video conferencing solutions. Viggiano (2004) similarly compiled examples of IL instruction for online learning and noted that 'online tutorials seem to work well for introductory library instruction and IL training, provided they incorporate active learning components' (p.50).

Several examples of personalised learning in an online environment were retrieved from the literature (Assaf, Elia, Fayyoumi, & Taurino, 2009; Dey, Burn, & Gerdes, 2009; Eze, Ishaya, & Wood, 2007; Fernandez, 2019). In these examples, personalisation is defined as:

> personalized learning tools and techniques [which] are designed to empower students to have increased agency in creating learning experiences that meet their individual needs. (Fernandez, 2019, p.1).

Articles retrieved from the education and library sciences literature describe the students' role in personalising their educational experience by choosing pre-designed learning objects. Rutledge and LeMire (2017) discuss the concept of library reference questions as 'a small, one-on-one version of information literacy instruction' (p.352) and expand upon the librarian's role in assisting faculty with creating collaborative, personalised learning environments. However, there is a gap in the literature concerning personalisation of IL instruction. No examples of librarians creating personalised video instruction intended to be consumed only by the individual requesting the IL reference transaction were retrieved in the literature.

The health sciences literature search returned numerous results for the commonly utilised instruction methodology of 'See One, Do One, Teach One', or SODOTO. Developed in 1890 by William Stewart Halsted at Johns Hopkins University, Sandra Kotsis and Kevin Chung (2013) describe the history of SODOTO thus:

> Halsted's model of 'see one, do one, teach one' is based on acquiring increasing amounts of responsibility that culminated in near-independence. Halsted was not only interested in developing a system to train surgeons, but also in creating teachers and role models. (p.2)

Although there have been criticisms of the SODOTO method in the health sciences community in regards to non-uniform application, lack of feedback and patient safety (Lenchus, 2010;

Rodriguez-Paz et al., 2009; Zahiri, Park, Pugh, Vassiliou, & Voeller, 2015), it is still relevant in this bibliographic instruction application. Kotsis and Chung (2013) go on to describe that 'In support of the 'see one, do one, teach one' method, one is more likely to learn and remember the steps of a surgical procedure if one learns it 'hands on' and explains it to someone else' (p. 3). It is the author's experience that library instruction generally follows a See One, Do One model where the librarian demonstrates search techniques and strategies and the students then perform searches on their own.

2. Process

It is not uncommon for an online learner to initiate a literature search reference request via telephone, meaning the liaison librarian did not have a written research question from the student. In the past the librarian may have attempted to initiate a video conferencing session via WebEx as a next step. This was not always successful due to a myriad of potential technical difficulties, primarily problems with users connecting successfully to audio. If the WebEx session was successful, another issue presented itself: the technology of screen sharing could impinge on the academic integrity of the reference transaction. Screen sharing would allow for the librarian to navigate the student's screen, potentially leaving the student with intact search results that did not require much manipulation or thought.
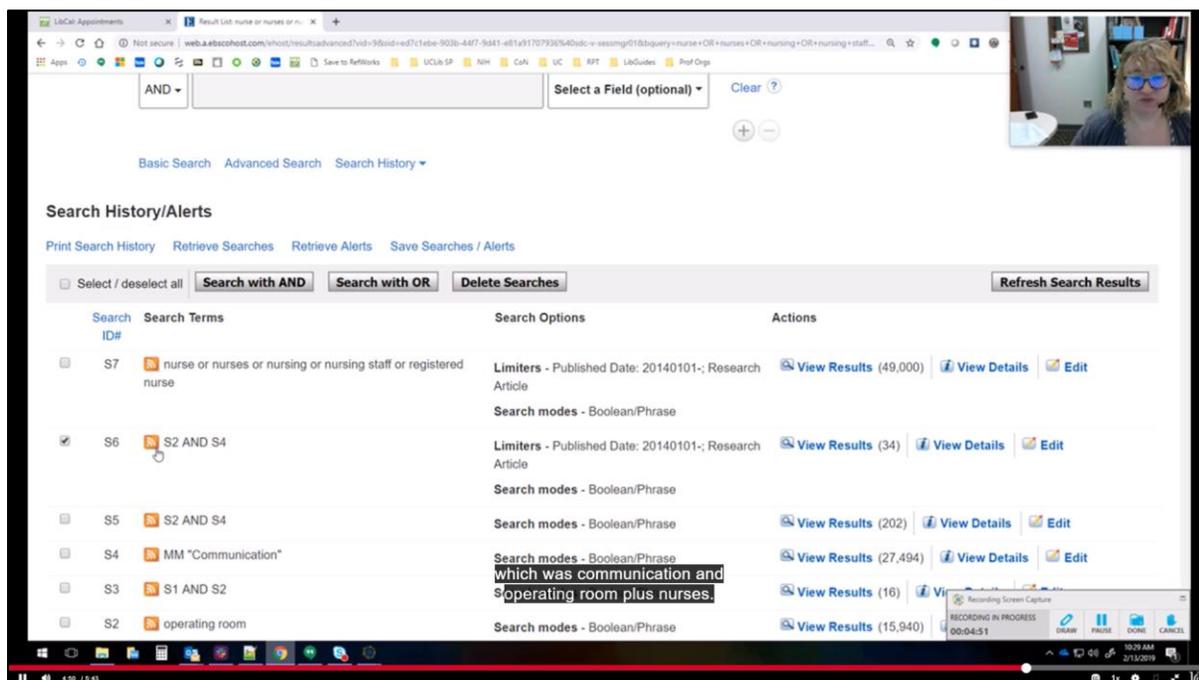
Personalised video instruction solved the academic integrity problem by forcing the student to recreate the demonstrated search to retrieve their search results. This approach was loosely modelled after the 'See One, Do One, Teach One' instruction model, which has been successfully incorporated using video presentation in the medical education curriculum (Dequeker & Jaspaert, 1998). Regardless of whether the initial consultation begins via telephone or email, the student is asked to provide several pieces of information to the librarian before the personalised video response is filmed: their research question in PICOT format; the list of keywords they have utilised in previous search attempts; the name(s) of the database(s) they have already searched.

This request for information functions on multiple levels. Most obviously, it provides the librarian with the necessary information to record the personalised video. It also subtly implies several key points to the student. Firstly, it indicates there is an expectation in the health sciences that the student has their question formatted a certain way before translating the search into the database (the PICOT question format). Secondly, without describing the theory or rationale of why, it informs the student that their question needs to be broken down into keywords, not entered in its entirety into the database search bar. Finally, the list of questions also implies that the student may need to search multiple databases to properly answer their question.

In preparing for the recording, the librarian reads the research question and information presented by the student. No additional preparation or preemptive searches are conducted before recording begins. The videos are recorded in one take and no editing is done. The length of the video depends on the complexity of the question, but most of the videos range between six and eight minutes in length. Pitfalls that occur as part of the search experience give the librarian the opportunity to narrate their thought process to the student and demonstrate how they would work out of the problem. As described by Halpern and Lepore (Swanson & Jagman, 2015), it is essential that 'rather than teaching our students where to click, we are involving students in solving real-world information seeking problems' (p.356). Having the courage to be vulnerable and demonstrate that even expert searchers still at times struggle with locating reliable, quality information helps to create a human connection with students. Guo, Kim, and Rubin (2014) also found that 'videos produced with a more personal feel could be more

engaging than high-fidelity studio recordings' (p.42). In this personalised context, unsolicited feedback from students demonstrates that they appreciate this human touch and find it reassuring that even the expert librarian sometimes runs into difficulty. The impact is in the librarian's ability to verbalise and demonstrate a critical thinking, problem-solving approach to work through any problems that may be encountered. For this reason, the videos are recorded without any previous attempts at searching and with no editing.

The University of Cincinnati subscribes to a hosted instance of Kaltura, an online video platform which 'provides live and on-demand video [Software as a Solution]' (Kaltura, 2019). The Kaltura Capture Space Desktop Recorder allows for several recording options and the option to record screen and webcam is almost always chosen for the personalised video instruction recordings. In an online learning environment, personalising the interaction between student and instructor is easily achieved by recording not only the information being transmitted but also the person doing the transmitting. Guo, Kim and Rubin (2014) found that 'videos that intersperse an instructor's talking head are more engaging than slides alone' (p.42). The screen and webcam option provides a picture-in-picture visual of the screen and the instructor captured by the webcam as seen in Figure 1.

Figure 1: Picture-in-picture of screen and webcam capture

During recording, the inset webcam box can be moved if it is in the way of the content being captured.

The personalised video instruction recordings generally cover several components:

1. An introduction of the person making the recording.
2. Reading the question provided by the student via email.
3. A description of the website used as the starting point for the research process.
4. Reference to the keywords or concepts provided by the student to guide the database selection process.

5. A description of how to authenticate to the resource if the student is not on campus.
6. A demonstration and narration of the search process.
7. A brief description of how to assess and analyse search results for relevancy.
8. A reminder of how to access full text.
9. A conclusion stating how to contact the librarian if there are any additional questions.

The bulk of the content covers the actual search process. The librarian begins by explaining subject headings and their utility in the precision and recall of the search results. Depending on the database, the librarian demonstrates and narrates how to locate the subject heading look-up. A utilisation of best practice of ORing subject headings with keyword searches is also demonstrated. How to utilise Boolean operators within the selected database is demonstrated with a brief explanation of how the Boolean operators AND and OR function. The student is informed that this approach of breaking down the research question into pieces and correctly reassembling using Boolean operators can be utilised for almost any research question.

If search results are too narrow or broad in scope the librarian demonstrates either ORing like concepts to broaden or ANDing in additional concepts to narrow. Again, no edits are made to the recording: the thought process of the librarian is provided via narration as the tasks are completed. The videos often provide opportunities to discuss issues such as search string reproducibility and documentation as well. Captions are requested for accessibility using the Cielo24 captioning service available as part of Kaltura.

The video recording is then published as unlisted, which means that only individuals possessing the link can view the video. The link to the video as well as any links used within the video (library website or databases, for example) are shared with the student via email. In select instances, links to additional lecture recordings such as the library's *Introduction to Literature Searching* or *Literature Searching for Systematic or Integrative Reviews* workshops are provided as well. The student is given information about how to contact the librarian if any follow-up information is needed.

3. Assessment

An outcomes assessment was conducted. Statistical video data spanning four semesters from August 2017 through May 2019 was examined for number and duration of views by student recipients. Additionally, unsolicited student comments received via email were compiled and examined using content analysis.

3.1 Data Analysis

The University of Cincinnati Kaltura software enables collection of the following data:

1. Visits – number of times users visited video page.
2. Plays – number of times users played video.
3. View drop off – average percentage of video viewed before closed.
4. Average view time.
5. Comments.
6. Top plays in channels – channels in which the video is played most often (if published in any channels).

7. Top plays in categories – categories in which the video is played most often (if located in any categories).
8. Top engaged users – users who have the most plays on that specific video.

From August 2017 through May 2019, 49 videos were sent by the liaison librarian to 44 students. Data from the Kaltura platform on plays, view drop off and average view time was analysed. Of the 35 videos (71%) that were viewed, several trends emerged. It is not uncommon for a student to watch their personalised video numerous times. Of the 35 watched videos, 20 (57%) were watched more than once. Of the 49 sent videos, 14 (29%) had a watch time of 100%, and 18 (37%) were watched more than 100%, meaning 65% of all videos were watched in their entirety or more (Figure 2).
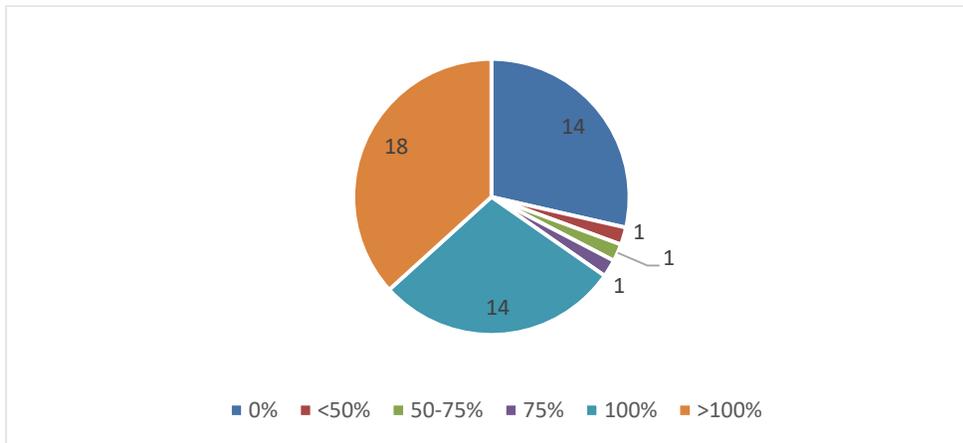
Figure 2: Percentage of video watched

Perhaps most significant is the average view time. In an age where the common assumption is that viewers will not watch a video longer than six minutes (Guo, Kim, & Rubin, 2014), the average duration of the videos from this sample with one or more views was eight minutes and twenty-two seconds. Of the 35 videos watched at least once, 34 (97%) had a 50% or more watch duration. 32 of those 34 videos (94%) were watched 100% or more. The average run time for the subset of videos watched 100% or more was eight minutes and thirty-one seconds (Figure 3).
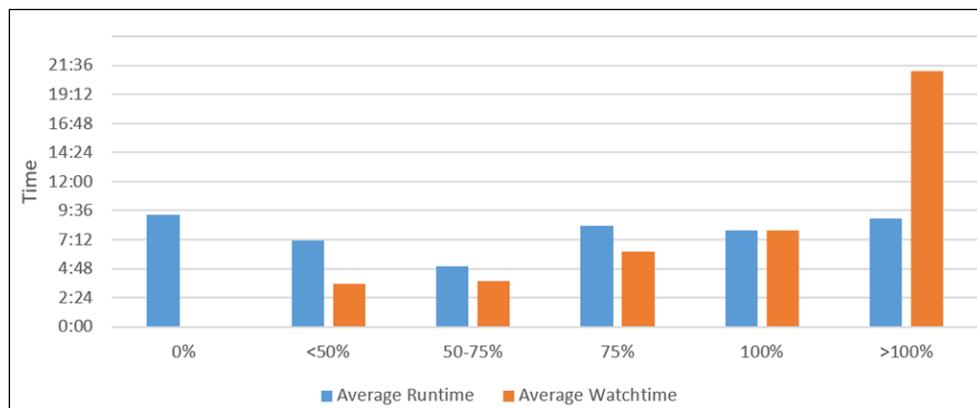
Figure 3: Collective time spent on video

3.2 Content Analysis

A total of 20 unsolicited comments were received by student video recipients via email. A content analysis of those comments revealed 18 expressions of gratitude and 12 instances where students remarked that the video was 'extremely helpful', 'helpful' or made the search process 'easier'. A selected list of student comments is provided in Table 1.

Table 1: Selected unsolicited student comments

Thank you so much for you [sic] assistance with the research article search. I was able to find the additional article I needed for my paper.
This was so incredibly helpful! Thank you so much!!
I saw the video and it was great. I can use it as a resource on how to look up articles. Thanks so much for your help!
I can not [sic] thank you enough for taking the time to make the video for me. It was very helpful! I have found my 6th article and have completed and submitted my assignment.
Thanks for all your help the video made it easier for me to search. I appreciate you taking the time to make it.
I really love how you sent me a video to walk me through how to do the search. I actually never knew how to do an effective search like that before. So incredibly useful, thank you.
Thank you for helping me out with finding articles for my research paper. I am going to work on finding articles for my paper the way you suggested and if I have any questions I will reach back to you.
Thank you so much!! This proved to be extremely helpful! It has helped to make my searches faster and more concise. I may follow up with you in the future if I have anymore [sic]. questions as the course goes on.
Thank you so so much! That was so helpful & I finally found 2 articles!
I am using your techniques for research and they are very helpful.

4. Framework Application

The utilisation of the personlised video format is in and of itself an application of metaliteracy. As Nicholas Negroponte (1996) writes in his seminal text *Being Digital*:

> In the post-information age, we often have an audience the size of one. Everything is made to order, and information is extremely personalized. (p.164).

Although asynchronous, the personalised video created by the liaison librarian is a form of collaboration with the student, using the student's research question and prior work as a teaching moment. Mackey and Jacobson (2014) describe how:

> we want to teach students more than how to search; we want them to gain high-level critical thinking abilities to better understand their own search processes… (p.11).

The personalised video instruction is an opportunity for the student to see that searching the literature is sometimes a difficult or frustrating experience for even the most seasoned

professional. The liaison librarian is also able to impart their critical thinking process with the student as part of the video recording. Mackey and Jacobson (2014) go on to define metaliteracy as 'an overarching model for connecting related literacies with an emphasis on emerging technologies' (p.15). In the context of the personalised video instruction, the emphasis on technology may also be considered digital literacy (DL). During recording, the liaison librarian is very deliberate in narrating actions relating to DL. There are no assumptions made about the student's comfort level with digital applications; everything is provided with narration. For example, *I am selecting the text from your email with my cursor. I am pressing CTRL + C on the keyboard to copy the text. I am right clicking my mouse and selecting paste to paste the text I've copied into the search bar*. Common tasks such as opening new tabs, locating and downloading PDF full text, or using CTRL + F to locate keywords in an abstract or PDF are all provided with voice-over narration and instructions to incorporate additional metaliterate elements into the personlised video instruction.

5. Further Exploration

As a means of expanding this successful personalised model, the liaison librarian has since integrated a non-personalised video demonstration as part of a graded assignment within a for-credit course. The online learners are expected to watch the video demonstration to learn the mechanics of search. Although comprehensive quantitative data collection has not been completed, qualitative remarks from student learning objective assessments demonstrate an impact from this approach: …*the video depicting how to implement the [medical subject headings] search was very helpful. After watching the video, I was able to follow along with the steps and effectively conduct a search using MeSH terms to develop the search string that I wanted.* Additional research and data collection on the personalised video instruction is warranted to determine if students are transferring generalisable skills from the specific examples provided.

6. Conclusion

As personalised video instruction continues to be utilised, students routinely provide unsolicited positive feedback via email: *I really love how you sent me a video to walk me through how to do the search. I actually never knew how to do an effective search like that before. So incredibly useful, thank you.* Additional research is warranted to prove the validity of knowledge retention for students receiving these videos. However, the immediate results and outcomes of this cursory evaluation are overwhelmingly positive. Even if the student never watches the resulting video, the minimal-prep approach to recording and lack of editing almost always ensures that the librarian spends less time creating an unwatched video than would have previously been spent attempting to schedule a synchronous web-based instruction session. For the videos that are watched, the students are guaranteed a 'See One, Do One' learning experience, in that they must recreate the demonstrated search to access the results. Numerous elements of metaliteracy are also incorporated, namely attempts to share critical thinking skills, utilisation of technology tools and the collaborative nature of the video itself. Personalised video instruction addresses the problem of making the librarian accessible to students in a global learning environment by utilising an asynchronous timeframe scenario that is not only convenient for both student and librarian but also provides successful IL instruction.

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