

Information-seeking Strategies Used and Challenges Encountered by Art and Design Students in Uganda When Seeking Information

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Abstract

Access to relevant information is crucial for Art and Design students to meet their information needs and achieve their educational goals. This paper explores the information-seeking strategies used by Art and Design students in diploma-awarding institutions in Uganda, and the challenges they encounter when seeking information to meet their information needs. This is part of a doctoral study that investigated the information-seeking behaviour of Art and Design students in diploma-awarding institutions in Uganda. The study population comprised Art and Design students in the four Art and Design institutions, library heads in the same institutions, and directors at the National Council for Higher Education (NCHE). Data was collected using questionnaire, interview and observation methods. Data was collected from February to August 2022. The study revealed that Art and Design students use various information-seeking strategies to locate and access information. Browsing online images, photographing activities in the environment, recording videos of activities in the environment, and consulting Art and Design librarians were the most used. The least used strategies included browsing art and design collections on library shelves, using keywords, and using Boolean operators. The study found that Art and Design students encountered varied challenges when seeking information. The key challenges were lack of Internet at the institutions, inadequate and outdated information materials in the library, slow Internet, high cost of Internet data, and lack or inadequate knowledge to evaluate the quality of information on the Internet. The key recommendations included the need for Art and Design institutions to invest heavily in ICT infrastructure, including Internet connectivity, and also to develop information literacy courses for the students; the need for the NCHE prioritise monitoring of the study institutions to ensure compliance with library standards; and the need for the Government of Uganda zero-rate the Internet in the study institutions.

Keywords: *Art and Design students; Challenges; Information-seeking strategies.*

Introduction

Access to relevant information is crucial for Art and Design students to meet their information needs and succeed in their academic endeavours. Information is a message expressed in some medium and/or that has the potential of changing a person's consciousness (Case & Given, 2016). Information-seeking is an interactive behaviour of the end users with information systems (Sedghi et al., 2018). Ikoja-Odongo and Mostert (2006) conceive information-seeking as a process with which individuals engage to purposefully change their state of knowledge. A user such as an Art and Design student seeks information from various systems and sources when he or she recognises a gap in his or her knowledge to perform a given task or solve a problem (Case & Given, 2016). Art and Design education is both theoretical and studio-based but the latter is dominant (Appleton et al., 2017; Kanchana, 2015; Lo & Chu, 2015). Art and Design education necessitates students to be original/creative (Toit, 2015), and inspiration is key to the creative process. Art and Design entails visual representation of various aspects of the world.

Art and Design students work in various media, such as sculpture, painting, print-making, textile design, graphic communication design and ceramics (Eckardt, 2014; Lo & Chu, 2015) and, therefore, seek information with regard to these media. To locate and access information, a user such as an Art and Design student utilises one or more information-strategies. The strategy used determines, or at least influences, access to the information sought (Korobili et al., 2011). An information seeker may change from one search strategy to another when not satisfied with the search results, and as his or state of knowledge changes. Search strategies are information-seeking routines students adopt (Urquhart & Rowley, 2007). An information seeker may encounter various challenges when seeking information to satisfy an information need, and knowing such challenges is crucial for information providers to devise solutions to the same.

Uganda's higher education sub-sector comprises three broad categories of higher education institutions (HEIs), namely universities, other degree-awarding institutions (ODAI), and diploma-awarding institutions, also referred to as tertiary institutions (National Council for Higher Education [NCHE], 2022a; Universities and Other Tertiary Institutions Act, 2001, as amended). HEIs are both public and private, with the latter constituting the majority, at 184 (74.2%), while the former are only 64 (25.8%) (NCHE, 2022b). The majority of the HEIs in Uganda are diploma-awarding institutions, at 177 (71.4%), followed by universities, at 53 (21.4%) and, lastly, ODAs, at 18 (7.2%) (NCHE, 2022b). HEIs in Uganda are regulated by the NCHE, a government agency under the Ministry of Education and Sports (Universities and Other Tertiary Institutions Act, 2001, as amended). The NCHE requires all HEIs to have a library with varied, authoritative and up-to-date information resources (Uganda, 2005a). The libraries are also required to develop and maintain a system that enables a user to identify and access information resources in its collection easily and efficiently, and to provide a wide variety of quality services to encourage optimal use of information resources. All the three categories of HEIs in Uganda offer study programmes in Art and Design. Out of 248 HEIs, 15(5.3%) offer study programmes in the Art and Design discipline, of which ten are universities, one is an ODAI, and four are diploma-awarding institutions (NCHE, 2019).

Objectives

The study set out to:

- (i) Examine the information-seeking strategies used by Art and Design students in diploma-awarding institutions in Uganda.
- (ii) Establish the challenges Art and Design students in diploma-awarding institutions in Uganda encounter when seeking information.

Literature Review

This study reviewed literature on information-seeking strategies used by Art and Design students, and the challenges they encounter when seeking information to meet their information needs.

Information-seeking strategies

Very few studies have examined the information-seeking strategies Art and Design students use to locate and access information. Literature reveals that browsing is a key strategy used by Art and Design students (Brett, 2013; Frank, 1999; Toit, 2015). A study by Brett (2013) on the image-seeking behaviour of Art and Design students in further education at Aberystwyth University, Frank's (1999) study on how student artists use general academic libraries for their creative needs, and the study by Toit (2015) on the information-seeking behaviour of the Open Window School of Visual Communication undergraduate students found that Art and Design students browsed library shelves/collections to access information materials. The study by Frank focussed on the use of general academic libraries by studio art students to meet their creative needs, hence the finding reflects the study context. Art and Design students also browse websites for information. This was reported by two studies carried out by Lo et al. (2016) on the use of smartphones by Art and Design students for accessing library services and learning at the Hong Kong Design Institute and by Miller (2014) on collecting library resources for video game design students at the Savannah College of Art and Design.

Studies by Crookendale (2020) on the art school and the library, Frank's (1999) study on how student artists use general academic libraries for their creative needs, the study by Pandey and Kumar (2019) on the information-seeking behaviour of users in Rajasthan art and culture and Toit's (2015) study on the information-seeking behaviour of the Open Window School of Visual Communication undergraduate students show that Art and Design students seek assistance from various people to identify, locate and access the information they require to meet their information needs. A study by Crookendale (2020) found that students at Virginia Commonwealth University in the United States of America sought assistance from librarians. In India, Pandey and Kumar (2019) revealed that Art and Design students consulted staff to access information. On her part, Toit (2015) reported that Art and Design students in South Africa asked lecturers and the librarian for assistance in case they failed to find relevant information by themselves. Similarly, an earlier study by Frank (1999) reported that some Art and Design students at twelve universities and colleges in Minnesota sought assistance from three categories of people, namely fellow students, librarians and art professors, for information on new artists and images when they failed to find the same on their own. However, the students sought assistance more from art professors than librarians.

Literature indicates that Art and Design students use the library catalogue to identify and access information resources from the library collection. Studies done by Frank (1999) and Pandey and Kumar (2019) revealed that Art and Design students used the Online Public Access Catalogue (OPAC) to locate information materials in the library collection. Studies also show that Art and Design students use keywords in search queries. The use of keywords was reported by Miller (2014) in a study done among Art and Design students at the Savannah College of Art and Design. Literature shows that Art and Design students use the chaining strategy to access information resources, and this was revealed by a study done in India by Pandey and Kumar (2019). Literature also indicates that Art and Design students use indexes to locate and access the information they need, and this has been reported by two studies done by Pandey and Kumar (2019) and Frank (1999) in India and the United States of America, respectively.

Challenges encountered when seeking information

Literature indicates that Art and Design students encounter a challenge of lack of or inadequate relevant information resources in the library. In Sri Lanka, a study by Kanchana (2015) on the information needs of the undergraduates in visual and performing arts found that the key challenge the students faced was lack of relevant information resources in the library. Similarly, Miller's (2014) study on collecting library resources for video game design students at the Savannah College of Art and Design found that the institution's library lacked some of the art books the students needed. The same study reported that video game-related materials were few. Miller's study further found that the information materials that were not available in the library were too expensive for the individual students to procure. The study by Eckardt (2014) on meeting the information needs of Studio Art students in the academic library at the University of North Carolina at Chapel Hill reported that most of the information resources students at the university

needed for their research were not available in the preferred print format. On their part, Munster et al. (2018) in a study on image libraries and their scholarly use in the field of art and architectural history revealed that Art and Design students lacked access to quality information materials.

Studies by Gatten and Bryant (2010) on CalArts student behaviours and habits, Kanchana's (2015) study, and the study by Miller (2014) show that Art and Design students encounter a challenge of lack of up-to-date information resources in the library. Kanchana's (2015) study revealed that the library at the University of Visual and Performing Arts in Sri Lanka lacked up-to-date information materials that the students needed. Equally, in the United States of America, a study by Miller (2014) found that many of the library electronic databases at the Savannah College of Art and Design lacked current journal issues. Still in the same country, a qualitative study by Frank (1999) on how student artists in twelve colleges and universities in Minnesota use general academic libraries for their creative needs found that the libraries had few up-to-date books for some media. Again, in the same country, Gatten and Bryant (2010) revealed that information on very current contemporary art and artists was difficult to obtain by the students at the California Institute of Arts. In India, Pandey and Kumar (2019), in their study on the information-seeking behaviour of users in Rajasthan art and culture, revealed that there were no up-to-date information resources in the library.

Literature indicates that Art and Design students encounter challenges associated with the library catalogue. A study by Frank (1999) revealed that the search functions of the OPAC were complicated for the students, and the OPAC was not user-friendly for the art-related concepts. On the other hand, Gatten and Bryant (2010) found that some of the books listed in the catalogue were not available on the library shelves. Literature also reveals that Art and Design students encounter challenges related to information and communications technology (ICT), including the Internet. Lo et al.'s (2016) study on the use of smartphones by Art and Design students at Hong Kong Design Institute for accessing library services and learning found that the slow loading speed of the information materials and a poor Wi-Fi connection affected access to databases and reference materials, with the former being affected most as it requires high bandwidth. The same study found that the students lacked specialised mobile applications, and that the webpage was not formatted for smartphones. On their part, Gatten and Bryant (2010) indicated that the library's computer laboratory was not readily available to students at the California Institute of Arts to access information because it was also being used to host seminars and library instruction sessions.

A study by Bennett (2006) on bringing the studio into the library and another by Miller (2014), both conducted in the United States of America, show that Art and Design students encounter a challenge of distant location of libraries from Art and Design studio buildings where lectures take place. Bennett reported that the sculpture studios were the farthest from the Art and Architecture Library at Yale University, resulting in failure by students to comply with the circulation policy, and having to pay fines.

Literature reveals that Art and Design students encounter several other challenges. A study by Crookendale (2020) on the Art School and the library indicated that the library website was difficult to navigate by some of the Art and Design students at Virginia Commonwealth University. On their part, Pandey and Kumar (2019) found that students in India lacked knowledge of how to effectively use the library, and library staff did not support them accordingly. A study by Kanchana (2015) found that the students at the University of Visual and Performing Arts in Sri Lanka had limited time to seek information due to busy lecture schedules. The same study found that students faced a challenge of language barrier, in that whereas the majority of them preferred to access information in Sinhala language, most of the information resources were published in other languages, such as English, Hindi and Sanskrit. An earlier study by Frank (1999) revealed that whereas Studio Art students needed coloured copies of information materials, they could not be reproduced in the library. The same study found that library policies did not permit external circulation of reference books and periodicals, thereby limiting access to information by the students. The literature reviewed suggest that the majority of the challenges Art and Design students encounter when seeking information are associated with the libraries. This is not very surprising, given that the majority of the studies have been conducted in the context of academic libraries.

Research gap

Few studies have been conducted on the information-seeking behaviour of Art and Design students as highlighted by Crookendale (2020), Eckardt (2014), Lo and Chu (2015) and Munster et al. (2018). Moreover, the studies have been done mainly in the developed countries of America and Europe, and partly in Asia. Yet, owing to a number of factors, including variations in the level of development of information systems and information technology, the information-seeking strategies used, and the challenges encountered by Art and Design students in developing countries, like Uganda, might be significantly different from those in the developed countries. No study has been done on the information-seeking behaviour of any category of Art and Design students in Uganda. It is these shortcomings or gaps in existing literature that justified this study.

Methodology

The study was conducted in four diploma-awarding Art and Design institutions in Uganda, namely Artfield Institute of Design located at Naguru Hill, Nakawa Division, Kampala, the capital city; Buganda Royal Institute of Business and Technical Education located in Mengo, Rubaga Division, Kampala; Michelangelo College of Creative Arts located in Kisubi Mission Village, Katabi Sub County, Wakiso District; and Nagenda International Academy of Art and Design, located on Plot 216, Block 401, Namulanda, Wakiso District. The study was also conducted at the NCHE, located at Plot M834, Kigobe Road, Kyambogo, Nakawa Division, Kampala. The NCHE was included in the study because it is the regulatory agency for HEIs in Uganda, diploma-awarding Art and Design institutions inclusive, and it is mandated, among other things, to develop higher education standards, including those of the library, and to monitor and evaluate HEIs for compliance with the standards (Universities and Other Tertiary Institutions Act 2001, as amended).

At the time of the study, there were 324 Art and Design diploma students in the study institutions, and a sample of 184 was used. The sample was computed using Yamane Tora's method. The method was designed to determine the sample size for finite populations, hence the selection for this study. The computation of the sample size is shown below:

$$n = \frac{N}{1+N(e)^2}$$

where n is the sample size, N is the population size and e is the margin of error. The method is based on a confidence level of 95%, hence a margin of error of 0.05.

$$n = \frac{324}{1+324(0.05)^2} = 184$$

This study triangulated the data collection methods, that is, questionnaire, interview and observation were used to collect data. An explanatory sequential mixed design was used in which qualitative (interview and observation) data was collected after collection and preliminary analysis of quantitative (questionnaire) data. The sequential mixed design was selected to enable the researcher to corroborate quantitative data with qualitative data and to follow up on the key issues that emerged from the questionnaire data, in an effort to understand the meanings behind some of the statistics. The researcher obtained a proportionate number of students on the seven diploma programmes to ensure sample representativeness. The questionnaire was administered to a sample of 184 Art and Design diploma students. The respondents were provided with options to select from, and were permitted to provide any other responses that were not given on the lists. Convenience sampling was used to select individual student respondents. Questionnaires were administered to the respondents mainly before and after lectures. Face-to-face semi-structured interviews were conducted with five key informants, namely four library heads in the study Art and Design institutions, and one of the three directors at the NCHE. The director was purposely selected on the basis of being central in the development of higher education standards, including library standards and the monitoring of HEIs, diploma-awarding Art and Design institutions inclusive, for compliance with the standards. The interviews were audio-recorded using a laptop to ensure all the responses were captured, and some of the

responses were also recorded in a counter book. Observation was conducted in the libraries of the four Art and Design institutions. Some of the key issues that emerged from the questionnaire data were addressed in interviews and observation. Data was collected from February to August 2022. Ethical approval was obtained from the Makerere University School of Social Sciences Research Ethics Committee and the Uganda National Council for Science and Technology (UNCST). Informed consent was obtained from all the study participants. Pseudonyms were used to conceal the identity of the interviewees.

Quantitative data from the questionnaires was analysed using the Statistical Package for Social Sciences (SPSS) software version 23. The SPSS was used to perform univariate analysis, which describes a single variable (Sarstedt & Mooi, 2019). After data entry into SPSS, it was cleaned prior to analysis, and the results were presented in tables and figures. On the other hand, qualitative data from interviews and observation was analysed thematically. After conducting interviews, the researcher transcribed the data. The researcher read through the transcripts and observation field notes several times to develop a deeper understanding of the data, and thereafter assigned codes to segments of the data. Hand coding of the data was adopted owing to the existence of a small database of transcript and field notes. The themes (categories) were identified by examining the codes that participants discussed most frequently and those that were unique.

Findings

Of the targeted sample of 184 Art and Design students, 174 participated in the study, representing a response rate of 94.5%. All the five targeted key informants participated in the study, giving a response rate of 100%. The high response rate renders valid the data collected and the findings derived therefrom. The following subsections present the findings of the study on the background information of the participants and on the two study objectives stated in section 2.

Background information on the participants

The background information on the participants in terms of age, gender, study programmes, education level and work experience is given in the following subsections.

Age

The study considered the age distribution of the student respondents and the results are shown in Figure 1.

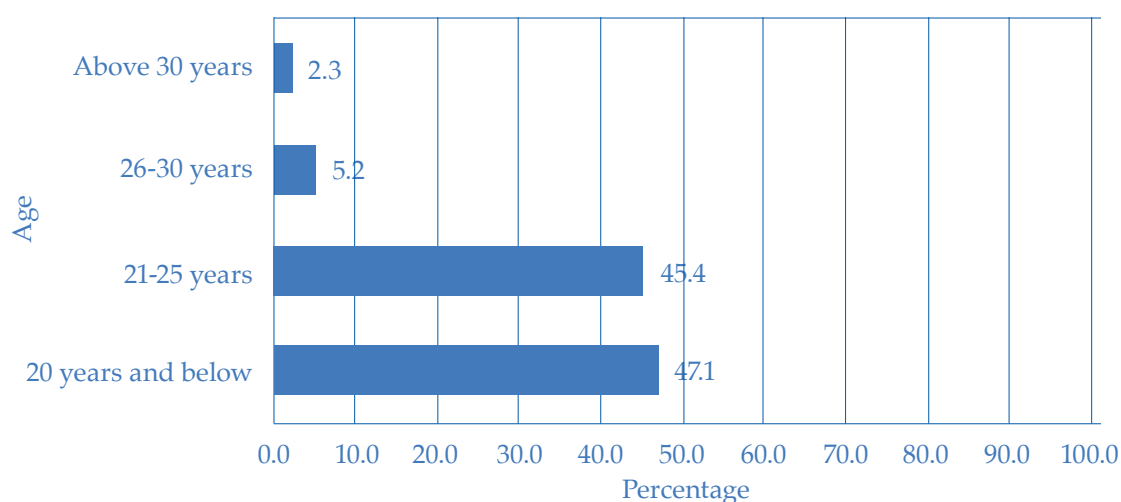


Figure 1: Age distribution of Art and Design students

The results in Figure 1 show that most of the respondents were in the age brackets 20 years and below (47.1%) and 21–25 (45.4%), which is expected of students at diploma level in Uganda. The Uganda Bureau of Statistics (UBOS) (2017) provides 19–24 years as the age bracket of students at the post-secondary and tertiary education levels.

Gender

The gender of the 174 Art and Design diploma students who participated in the study is presented in Figure 2.

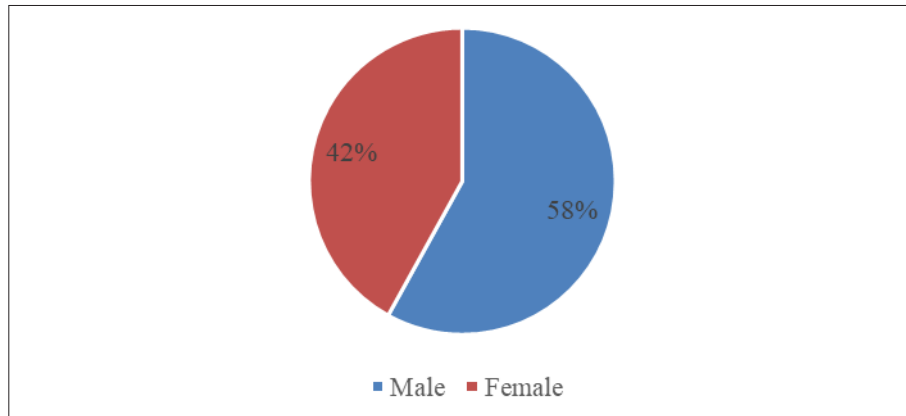


Figure 2: Gender distribution of Art and Design students

The findings presented in Figure 2 show that 58% of respondents were male and that the females accounted for only 42%. Art and Design education in diploma-awarding institutions in Uganda is, therefore, dominated by male students. Of the five key informants, four (80%) were female and only one (20%) was male. The findings reveal that females head all libraries in the diploma-awarding Art and Design institutions in Uganda.

Study programmes

The study established the programmes on which the student respondents were enrolled and the results are given in Figure 3.

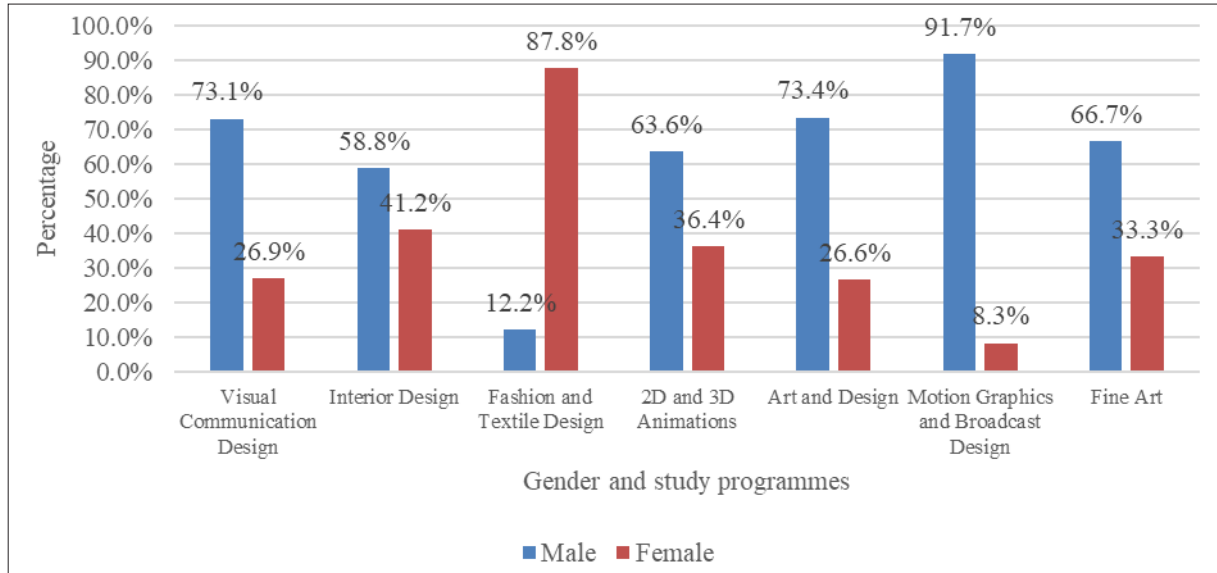


Figure 3: Distribution of respondents by study diploma programme and gender

The results in Figure 3 show that student respondents were enrolled on seven study programmes. However, male students dominated most of the programmes, namely Visual Communication Design, Interior Design, 2D and 3D Animations, Art and Design, Motion Graphics and Broadcast Design, and Fine Art. On the other hand, there were more female students in Fashion and Textile Design (87.8%).

Education level of key informants

The study was interested in the education level of the four library heads in the study Art and Design institutions and a director at the NCHE. The level of education of information providers and the discipline in which they are qualified influences the quality of information services offered to the users and the satisfaction of their needs. The highest level of education for all the four library heads was a bachelor's degree. However, the degrees were in four different disciplines, namely Information Technology, Records and Archives Management, Education, and Library and Information Science. On the other hand, the highest level of education of the director was a PhD.

The head of a library in a diploma-awarding institution in Uganda is required to possess at least a bachelor's degree in either Librarianship, Information Science or a related field (The Universities and Other Tertiary Institutions Regulations, 2005). The two library heads, holding bachelor's degrees in Information Technology and Education are, therefore, not qualified for the position. A staff member at the NCHE was surprised that some of the library heads did not have the requisite qualifications. The staff member remarked, "I would not imagine not having a qualified librarian would exist. This is automatic disqualification to getting a licence by an institution." The informant explained that whereas the NCHE is mandated by law to monitor higher education institutions to ensure compliance with the set standards, financial resources are at times not available to conduct the same. The informant revealed: "The requirement is that NCHE should monitor [institutions], but we can only monitor if funds are available."

Work experience of key informants

The study considered the work experience of key informants. Librarians can learn from their experience in information provision to, among other things, identify the information-seeking strategies Art and Design student utilise to locate and access information, and the challenges they encounter when seeking information, and thus be able to devise strategies to address some of the challenges. The study found that while two of the library heads had served for less than four months each, the other two had three and eight years' experience, respectively. This implies that 50 per cent of the library heads in the diploma-awarding Art and Design institutions were not experienced, which may affect the information services provided to the users, in terms of variety and quality. On the other hand, the director at the NCHE had four years' experience in that position, hence was knowledgeable about matters pertaining to library standards, and higher education in general.

Information-seeking strategies used by Art and Design students

The study established the information-seeking strategies used by Art and Design students in diploma-awarding institutions in Uganda, and the results are presented in Table 1.

Table 1: Students' information-seeking strategies

Information-seeking strategies	Most used (%)	Sometimes used (%)	Least used (%)	Not used (%)
Observing, such as nature and environment	65.5	25.3	7.5	1.7
Browsing images, such as from art gallery websites, databases, and Pinterest	59.8	26.4	9.8	4.0
Photographing, such as nature/ activities in environment	51.1	32.8	12.6	3.4
Recording videos such as of activities in the environment	46.0	34.5	12.6	6.9
Using keywords related to the search topic	37.9	38.5	14.4	9.2
Consulting Art and Design librarians for assistance	35.6	35.1	20.7	8.6
Browsing art and design collections on library shelves	31.6	43.1	14.4	10.9
Chaining (using reference lists given in art and design information materials)	27.0	30.5	30.5	12.1
Using a library catalogue	23.0	37.9	21.8	17.2
Using Boolean operators (and, or, not) in search queries.	13.8	34.5	24.1	27.6

The results in Table 1 show that observing (65.5%); browsing images from art gallery websites, databases, and Pinterest (59.8%); photographing of nature/activities in the environment (51.1%); and recording videos of activities in the environment are the most used strategies by the majority of the student respondents. On the other hand, using Boolean operators (13.8%) and chaining (27.0%) are not prevalent among the students.

Some of the above questionnaire results were corroborated with interview data. The strategy of consulting Art and Design librarians for assistance was corroborated by LH1, who remarked, “Sometimes a student may wish to access a design book but may not know where to find it in the library, and he or she calls me for help.” In the same vein, LH2 remarked, “I guide them on where to find information for their research.” LH3 commented, “Some of them do not know what they what, but at least they have an idea. For example, an Interior Design student may come and say I want something to do with painting, so I am always of help.” On her part, LH4 noted, “Some students consult me when they do not know the books to use. For me, I know what is in the library because I have spent much time here.”

Interview data also revealed that Art and Design students consult their Art and Design lecturers for information to meet their information needs. LH3 remarked, “The lecturers guide them on the books to use.” LH1 revealed that lecturers download textbooks from the Internet and make them available to students.

Questionnaire data on the use of the library catalogue is not supported by both interview and observation data. The interviews and observations conducted revealed that none of the four libraries in the study institutions had a library catalogue. The student respondents, therefore, could have mistaken a library catalogue for catalogues which are information materials. The library standards require libraries in all HEIs, including diploma-awarding Art and Design institutions, to develop and maintain a comprehensive catalogue that identifies all items in its collection by title, author and subject (The Universities and Other Tertiary Institutions Regulations, 2005). A director at the NCHC attributed the non-compliance by the study institutions with the library standards, including not having a library catalogue, to possible lapses in the licensing and accreditation process of institutions. The interviewee remarked, “Some of these [study] institutions have been there for a little while. There could have been a lapse in the licensing process or in the [inspections] teams.”

Observation data from two study institutions corroborated questionnaire data on the browsing of library print art and design collections, in that the libraries had only open access, which promotes browsing of collections. The other two libraries had closed access; hence, students only access information materials through a library staff member. This finding is consistent with questionnaire data on consulting a librarian as a strategy used by Art and Design students. One of the information-seeking strategies used by Art and Design students – browsing library shelves – is presented in the photograph below.



Figure 4: A student browsing library shelves at one of the study institutions

Challenges encountered by Art and Design students when seeking information

The study established the challenges Art and Design students in diploma-awarding institutions in Uganda encounter when seeking information. In the process of seeking information to satisfy an information need, information seekers may face challenges of different kinds. Moreover, knowledge of such challenges is crucial for information providers, including librarians, to undertake remedial action, which may include redesigning the information services, to ensure students access with ease the information they require to meet their information needs. In view of the above, respondents were asked to indicate, from a list of challenges provided by the researcher, the challenges they encountered when seeking information, and to state any other challenges they faced that were not given on the list. Their responses are presented in Table 2.

Table 2: Challenges encountered by Art and Design students

Challenges encountered	Responses	Percent
Lack of Internet at the institution	109	14.8%
Inadequate up-to-date art and design information materials in the library	100	13.6%
Slow Internet	100	13.6%
High cost of Internet data	90	12.2%
Inadequate art and design information materials in the library	76	10.3%
Lack /inadequate knowledge to evaluate the quality of information on the Internet	71	9.7%
Limited time to search for the needed information	68	9.3%
Inadequate computers at the institution to access information resources	61	8.3%
Inadequate relevant art and design information materials in the library	57	7.8%
Lack of access to wireless Internet at the institution	2	0.3%
Lack of access to Art and Design databases	1	0.1%
Total	735	100.0%

The results in Table 2 reveal that the key challenges the student respondents encountered included lack of Internet at the institution (14.8%), inadequate up-to-date art and design information materials in the library (13.6%), slow Internet (13.6%), high cost of Internet data (12.2%), inadequate art and design information materials in the library (10.3%), and lack of or inadequate knowledge to evaluate the quality of information on the Internet (10.3%).

A number of challenges the student respondents identified were corroborated by interview and observation data. The challenge of lack of Internet at the institution was confirmed by interview data. LH2, when asked to state the challenges Art and Design students encountered when seeking information, remarked, "The institution does not have Internet."

The challenge of inadequate art and design information materials in the library identified by Art and Design students was also confirmed by interview data. When asked to state the challenges Art and Design students faced when seeking information, LH1 remarked, "Few textbook titles." The same library head also indicated that since the outbreak of COVID-19, the institution's library had not received newspapers. On her part, LH4 indicated that Internet at the institution was unreliable: "It [Internet] is on and off."

Interview data also revealed that information materials in the library were outdated. When asked to specify the challenges Art and Design students encountered when seeking information, LH4 replied, "Most of books are above ten years. The books are of a variety and the copies are adequate, but the problem are the years of publication." This was corroborated by observation data in that in two study institutions (institutions 2 and 4), the majority of the information materials were published in the 1990s and early 2000s, hence not current.

The challenge of inadequate computers at the institution to access information resources identified by the Art and Design students was corroborated by observation data. Observation conducted by the researcher revealed that only one of the four libraries in the study institutions had computers (39) for student use.

Discussion of Findings

Information-seeking strategies

The findings revealed that Art and Design students use various information-seeking strategies to seek and access information. However, some strategies are utilised more than others. The findings indicated that observing was the most used strategy by the majority of the Art and Design students. Art and Design is largely preoccupied with visual representation of aspects of the world and, therefore, observing such aspects is fundamental to creating aesthetic artworks. The finding is consistent with a study by Lo and Chu (2015) which indicated that Art and Design students at Hong Kong Design Institute obtained information by observing people, daily life and streets.

The results indicated that Art and Design students browsed websites, including art gallery websites, for images. Browsing requires less cognitive effort to access information and this could explain why it is one of the most used strategies among the students. In addition, browsing is central to finding inspiration, which is at the heart of creating aesthetic artworks and designs. The finding is consistent with studies by Lo et al. (2016) and Miller (2014) which indicated that Art and Design students browsed websites to access information.

The findings also revealed that photographing nature/activities in the environment and recording of videos of activities are predominant information-seeking strategies among Art and Design students. To create quality artworks, such as sculptures and paintings, access to either a physical object, or image, photographs or videos of the same is vital. Art and Design students might not be in a position to make artworks from the field by observing activities, nature and the environment for various reasons, including limited time, and some events unfold fast, and as such taking photographs or capturing videos of such events and creating artworks and designs thereafter is more appropriate. None of the previous studies identified the taking of photographs and recording of videos as information-seeking strategies used by Art and Design students.

The findings showed that Art and Design students use keywords related to the search topic to search for and access information. This finding is in line with a study by Miller (2014) that indicates that Video Game Design students at the Savannah College of Art and Design used keywords to search for information on Google. The findings also revealed that Art and Design students did not use the library catalogue to locate and access information materials from the library. This is not surprising, given that none of the four study Art and Design institutions had a library catalogue. Libraries of HEIs in Uganda, including those in diploma-awarding Art and Design institutions, are required by the higher education regulatory framework to develop and maintain a comprehensive catalogue that identifies items in its collection by title, author and subject. The implication of this finding is that all libraries in the study institutions are not compliant with the library standard on the catalogue. The finding is not consistent with previous investigations by Frank (1999), Gatten and Bryant (2010), and Pandey and Kumar (2019) that found that Art and Design students utilised a library catalogue to locate and access information resources in the library collection.

Art and Design students consulted Art and Design librarians for assistance to access the information they needed to satisfy their information needs. Librarians possess expertise in the provision of information resources and services to the users and also have knowledge of the entire library collection and this could explain why Art and Design students consulted them. The finding is in agreement with studies by Crookendale (2020), Frank (1999), Pandey and Kumar (2019) and Toit (2015) which reported that Art and Design students obtained assistance from librarians to access the information they needed to satisfy their information needs. The findings also revealed that Art and Design students browsed library shelves to access information materials. The library collections in the study Art and Design institutions were small; hence Art and Design students could browse them with ease in a short period of time. In addition, browsing is central to finding information for inspiration, which is key to creating competitive artworks and designs. This finding is consistent with several previous studies by Brett (2013), Frank (1999), Lo et al.

(2015), Miller (2014) and Toit (2015) which indicated that Art and Design students browsed library shelves to access information materials.

The findings showed that Art and Design students use the chaining strategy to follow up on reference lists given in different art and design information materials. However, chaining was one of the least used information-seeking strategies among the students. The study by Pandey and Kumar (2019) indicated that Art and Design students in India used the chaining strategy. However, the extent of use of this strategy was not investigated.

The study also found that Art and Design students used Boolean operators in search queries to access the needed information. This strategy was also not common among most of the Art and Design students. This could be because Boolean operators require considerable cognitive effort on the part of the users, and at the diploma level, students may not have developed such competencies. It could also be because Art and Design students mainly sought visual information resources, such as from nature and the environment, Pinterest, and artworks. None of the previous studies identified the use of Boolean operators to access information by Art and Design students.

Challenges students encounter when seeking information

The findings revealed that Art and Design students face many challenges when seeking information to meet their information needs. However, the majority are mainly related to the Internet and the library system.

The findings showed that lack of access to the Internet at the study institutions is the most widely encountered challenge by Art and Design students. This is not surprising, given that only one of the four Art and Design institutions had access to the Internet. There is a variety of electronic information resources, some of which are free of charge, which students can access to satisfy their information needs. All HEIs in Uganda, diploma-awarding Art and Design institutions inclusive, are required by the higher education regulatory framework to have Internet connectivity. The implication of this finding is that most of the diploma-awarding Art and Design institutions are not compliant with the law (Regulation 13 of Statutory Instrument 80 of 2005) requiring them to have the Internet. The finding also implies that the information environment in the study Art and Design institutions is poor. Previous studies did not identify lack of Internet connectivity at the institution as a challenge Art and Design students encountered when searching for information. This could be because the existing studies were conducted mostly in the developed countries where institutions are adequately funded.

The findings also revealed that challenges of slow Internet and high cost of Internet data were regularly encountered by Art and Design students. Given the fact that three of the four study institutions did not have Internet, students have to buy Internet data to search for and access information and, as such, find the cost high. The finding on slow Internet is in agreement with a study by Lo et al. (2016) which indicated that slow loading speed of the information materials and poor wireless Internet affected access to information resources by Art and Design students at Hong Kong Design Institute. The previous studies did not establish high cost of Internet data as a challenge Art and Design students encountered when searching for information. This could be because the existing studies were done mainly in the developed countries where people have high incomes.

The findings showed that inadequate up-to-date information materials in the library was a prevalent challenge faced by Art and Design students when seeking information. Access to current information resources is necessary for Art and Design students to create quality artworks. All libraries in HEIs in Uganda, diploma-awarding Art and Design institutions inclusive, are required by the NCHC to provide users with up-to-date information materials, that is, those less than ten years old, with the exception of classics. The finding, therefore, implies that libraries in the study institutions are not compliant with the stated library standard. The finding is in line with several previous investigations by Frank (1999), Gatten and Bryant (2010), Kanchana (2015), Miller (2014), and Pandey and Kumar (2019) that indicated that some of the information resources in the library were not current.

The findings also indicated that Art and Design students faced a problem of inadequate art and design information materials in the library. All libraries in HEIs in Uganda, including those in diploma-awarding Art and Design institutions, are required, under the Universities and Other Tertiary Institutions Standards of 2005, to provide users with varied information resources, including maintaining collections in print or electronic format of not less than five core journal titles per academic discipline, and having at least ten titles per unit/course offered. The finding also implies that libraries in the study institutions are not compliant with the library standard on the provision of adequate information resources. The finding is consistent with two studies by Kanchana (2015) and Miller (2014) which indicated that the libraries either lacked or had few relevant information materials.

Lack of or inadequate knowledge to evaluate the quality of information accessed from the Internet was also a major challenge the students faced while searching for information to satisfy their information needs. This implies low information literacy on the part of the Art and Design students in Uganda. This challenge was not identified by existing studies on the information-seeking behaviour of Art and Design students. The findings also revealed that Art and Design students encountered a challenge of limited time to search for the needed information. This finding is supported by Kanchana's (2015) study which indicated that Visual Art students at the University of Visual and Performing Arts in Sri Lanka had limited time to seek information due to busy lecture schedules.

Further, the findings revealed that Art and Design students faced a challenge of inadequate computers at the institutions to search for and access information. All libraries in HEIs in Uganda are required under the Universities and Other Tertiary Institutions Standards of 2005 to have equipment, which may include computers, to enable users to access and use information. The finding implies that libraries in the study institutions are not compliant with the library standard on adequacy of computers. The challenge of inadequate computers at Art and Design institutions was not identified by the existing studies on the information-seeking behaviour of Art and Design students. This could be because the studies were done in institutions in developed countries, which have sufficient financial resources to procure adequate numbers of computers for the enrolled Art and Design students.

Conclusion

Art and Design students use various information-seeking strategies to seek and access information to meet their information needs, with the manual-based strategies being predominant. The strategies Art and Design students use most are influenced by the nature of their information needs. Art and Design students encounter varied challenges when seeking information to satisfy their information needs. The challenges are mainly related to the Internet and the library system, hence they are not compliant with the library standards (regulations) set by the NCHE. The information environment in the study Art and Design institutions is, therefore, poor, and requires urgent attention to enable students to meet their information needs and achieve their educational goals.

Limitations

Two of the four library heads did not have relevant qualifications. In addition, two library heads had served for less than four months in their positions. As a result, the concerned library heads were not knowledgeable about matters pertaining to the library systems and information-seeking by Art and Design students. However, observations conducted in the libraries enabled the researcher to obtain additional information.

Recommendations

In view of the study findings, this section presents recommendations to diploma-awarding Art and Design institutions, the NCHE and the Government of Uganda, with a view to enhancing Ugandan Art and Design students' access to varied, relevant and up-to-date information, to meet their information needs.

Regarding ICT-related inadequacies, which included lack of Internet connection, slow Internet and inadequate computers at the institutions to access information, the Art and Design institutions should invest heavily in ICT infrastructure. In relation to the challenges of inadequate relevant and outdated information materials in the libraries, the study institutions should increase the library budget for the procurement of information resources, including art and design textbooks, art and design exhibition catalogues, art and design magazines, and art documentaries. The libraries should also initiate and maintain inter-library loan schemes among themselves and also with universities and other degree-awarding institutions teaching programmes in Art and Design. Concerning lack of knowledge or inadequate knowledge by the students to evaluate the quality of information on the Internet, libraries in the study institutions should develop information literacy courses to equip Art and Design students with relevant knowledge and skills to identify, access, evaluate and use information efficiently and effectively. The focus should be on the use of online information search strategies, including Boolean logic, which, although they are key for the students to access relevant information in a short period of time, were found to be least used. The two Art and Design institutions that did not have qualified and experienced library heads should recruit qualified persons, and these should be holders of at least a bachelor's degree in Library and Information Science or a related field, and with at least two years' relevant experience.

In view of the key shortfalls in the libraries of the study Art and Design institutions, as explained in the preceding sections, the NCHC should prioritise monitoring them, and where there is persistent and gross failure to adhere to the library standards, statutory sanctions could be instituted.

In relation to the challenge of lack of Internet connection and slow Internet, and given the vital role of art and design to the tourism industry in Uganda and national development at large as stipulated in the Uganda NDP III and Uganda Vision 2040, the Government of Uganda should zero-rate the Internet in the study Art and Design institutions. With regard to inadequate and outdated information materials in the libraries, the Government should subsidise subscriptions to art and design electronic journals and databases, especially image databases for the study Art and Design institutions.

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Conflict of Interest

The authors declare no conflict of interest.

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