CHALLENGES AND SOLUTIONS OF STUDENT GROUPS DURING COLLECTIVE INFORMATION SEEKING IN RURAL HIGHER LEARNING INSTITUTIONS

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Abstract:

This study aims to investigate the barriers student groups encountered during the collective information seeking (CIS) process in rural higher learning institutions (RHLI) in Tanzania. The Karunakaran, Spence, and Reddy's (2013) model anchored to conduct this study. The population of the study comprised of selected RHLI students in Tanzania's rural settings. The purposive sampling technique used to select the study participants. 72 RHLI students were selected for the study; 18 RHLI students for interview, 18 RHLI students for Observation and 36 RHLI students for focus group discussion (FGD). This study used convenience sampling to select RHLI students for inclusion in focus group discussions and interview. The data for the study were collected through the use of observation, interviews and focus group discussions (FGD). Qualitative data were analysed through thematic analysis. Thematic analysis helped to develop different themes relating to the specific objectives of this study. The population of the study comprised RHLI final-year students in Tanzania's rural districts. Final- year students from three (3) RHLI amount to 259. Based on the interviews and focus group discussions (FGD) results, RHLI respondents provided suggestions on how faced challenges during CIS process could be tackled. The major challenges were identified as: absence of training among RHLI respondents on how to evaluate massive retrieved information on the internet, unreliable internet in rural RHLI institutions, low IL skills among RHLI student groups, few ICT equipment in rural RHLI institutions, absence of information on protective gears and working tools in RHLI courses, absence of information on reference professional items, absence of a policy or framework that guides RHLI student groups during CIS and absence of subjects librarians who were required to assist RHLI student groups during CIS.

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1. Introduction

The challenges faced by rural higher learning institutions (RHLI) student groups during collective information seeking (CIS) brings the common attention to how student groups fail to share experiences and skills to accomplish group tasks. Student groups in RHLI allow sharing skills, knowledge and exchanging experiences during CIS. Moreover, reliable internet is vital to VET students for accomplishing group tasks given during CIS. Professionally, people often conduct their work in settings containing a range of different teamwork situations and work practices in which people handle information and work activities on the internet (Hansen & Widen, 2017). Academics face challenges during CIS and might work collectively in their information seeking for various reasons, including to address a lack of expertise (Sangari & Zerehsaz, 2020). Sangari and Zerehsaz (2020) show that the challenges encountered by students during CIS happen when there is an increase in task difficulty, collective information seeking activities increase and more interactions with partners and the librarian occur.

RHLI students in rural Tanzania face the problem of failing to seek, retrieve and share information to accomplish their assignments in library settings due to their inadequate information seeking skills. In this regard, Wema (2021) found that higher learning students in Tanzania largely failed to seek, retrieve and share information to meet their information requirements, caused by facing the challenge of inadequate information seeking skills.

The challenges hinder student groups in RHLI institutions from accessing information during collective information seeking (CIS). Inadequate ICT infrastructures, poor internet services, poor searching skills and technophobia were found to be the most significant barriers to researchers for seeking, retrieving, sharing, and utilizing e-information in Tanzania (Mwantimwa, Mwabungulu and Kassim, 2021). The weak ICT infrastructure, difficult to utilise the online databases, difficult to access online databases from home and the low internet bandwidth are also among the impediments that students contend with when seeking, retrieving and sharing information in Tanzania's universities (Ngessa, 2018). The weak ICT infrastructure, difficult to utilise the online databases, difficult to access online databases from home and the low internet bandwidth are also among the impediments that students contend with when seeking, retrieving and sharing information in Tanzania's universities (Ngessa, 2018). Similarly, the problem that most of the postgraduate students interviewed indicated they faced included inadequate bandwidth when they attempted to utilise the Unisa online resources in South Africa, when Desta, Preez and Ngulube (2019) investigated the factors influencing the information- seeking behaviour of postgraduate students. Inadequate ICT infrastructures, poor internet services, poor searching skills and technophobia were

found to be the most significant barriers to researchers for seeking, retrieving, sharing and utilizing e-information in Tanzania (Mwantimwa, Mwabungulu and Kassim, 2021).

Flywell and Chigona's (2019) investigation on the digital information literacy (DIL) skills of first-years in Malawi at the University of Livingstonia had found low-effective DIL programmes for students. Thus, librarians as custodians of knowledge should carry out advocacy and awareness drives on emerging technologies to integrate them into these DIL programmes. This recommendation came against the backdrop that the library profession had witnessed a dramatic shift in service operations from a traditional library setting to a more digital-oriented library. The new technology and new trends in the library profession have created a need for further training among librarians to ensure that their patrons can continue seeking, retrieving, sharing and utilisation information in emerging electronic formats to avoid disruption (Isibika *et al.*, 2021).

Al-Qallaf (2018) observes that language difficulties and unfamiliarity with library conventions partly contribute to the students' lack of information, knowledge and skills when studying master's degree students on IL assessment at Kuwait University. Bickley and Corrall (2012), on their part, reported that one of the hurdles most of the undergraduate and postgraduate students in the United States (US) failed to differentiate between different personnel groups. The students knew about their departmental librarian and did not acknowledge the academic role of librarians. This aspect of lack of awareness of the librarians' role among the students during information seeking process led to the students' inability to satisfy their information-user requirements. The students reportedly were unable to use the information skills of these information professionals effectively to meet their information requirements in the library settings (Bickley and Corrall, 2012). VET students accounted for the lowest usage of library resources, particularly the online catalogue, to facilitate their information seeking requirements. Furthermore, respondents faced difficulties in comprehending the information retrieved (Turnel *et al.*, 2012).

Shahvar and Tang's (2014) study on collective information seeking behaviour of American libraries and schools of information studies (LIS) among undergraduates. Their study (Shahvar and Tang, 2014) found that some participants found it weird sharing the screen, keyboard, and mouse. A good number of the participants expressed their frustration with looking for filters, finding search terms, and deciding on the most plausible results most suitable for their academic task. Limited skills in utilising information technology equipment in accessing and retrieving information, coupled with the failure to know about the academic role of librarians, made the students fail to meet their information requirements in the library settings.

On their part, Majid and Yuen (2016) found that competition among students to outperform their counterparts and a lack of depth in peer relationships mainly hindered knowledge sharing during collective information seeking among student groups. Also, Malik and Ameen (2018) carried out a study on library and information science teamwork in Pakistan and found that all the interviewees acknowledged that teamwork in the information-seeking process constituted one of the most ignored areas from the local

perspective. In this regard, this study aimed to study the challenges faced by RHLI student groups during collective information-seeking behaviours of student groups in Tanzania, as supported by Malik and Ameen (2018). Specifically, Lee's (2013) study found that group members contended with difficulties in performing their research during various stages of the information process.

2. Methodology

The study conducted to investigate the challenges encountered by RHLI student groups during collective information seeking (CIS). This study employed descriptive approaches. Qualitative research serves to develop a rich and detailed understanding of certain theories, concepts, and constructs. This method also provided all-inclusive and complete views of group behaviour during the collective information seeking process and increased the validity of the research results using descriptive data and methodological triangulation. A Nvivo Version 7 Computer software was used to code, sort, categorise, and analyse the data.

RHLI student groups were given group assignments to accomplish. The participants worked on two tasks in a computer lab in the library. A review of the methodology used in CIS studies showed that computer lab settings were the most common method of data collection during collective information seeking (Hertzum and Hansen, 2019). In this study, the researcher purposively recommended final-year students from each RHLI. Purposive sampling was conducted on convenience and purposive samples that were randomly drawn. A convenience sample is one that is drawn from a source that is conveniently accessible to the researcher. Participants' views analysed to obtain their perceptions, understanding, and meaning attached to a subject in context. Below presents the details of the methodology used to conduct this study.

2.1 Participants

The study recruited 72 participants from the second year in RHLI in Tanzania's rural areas; 18 RHLI students for interview, 18 RHLI students for observation and 36 RHLI students for focus group discussion (FGD). From the outset, the respondents were briefed beforehand about the study in line with established research protocols. Thereafter, the participants had to sign consent forms after briefings for them to provide informed consent. The RHLI interview participants of three (3) pairs in each RHLI who signed up were given the group tasks to accomplish. They are required to be familiar with the use of digital libraries. Ten (10) RHLI students (56%) were male, and eight (8) RHLI students (44%) were female during the interview and focus group discussion. Focus group discussion (FGD) comprised 36 RHLI respondents. The participants were between 21 and 30 years old. The participants were randomly chosen from those who expressed their interest to reach 72 participants. The participants chose the day and time convenient to them for their sessions. Then, they performed two collective information-seeking tasks during collective information seeking (CIS) on the internet.

2.2 Settings

Each pair of participants in RHLI did their session separately at their convenient time in a computer lab. The computer labs were located in the RHLI libraries' premises. Sessions took between one and two hours. The variables in the study included information-seeking techniques and criteria used to evaluate the massive amount of information on the internet.

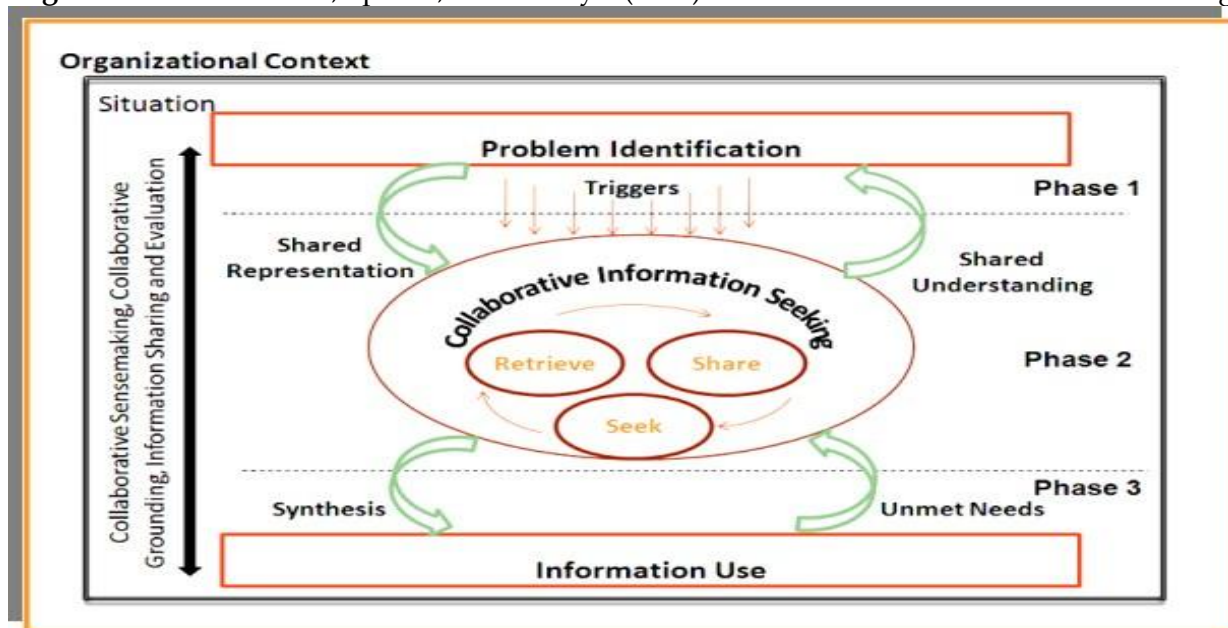## 2.3 Collective Information Seeking Model

Karunakaran, Spence, and Reddy's (2013) model has three phases of group-based information activities: Problem identification; three micro levels comprising seeking, retrieving and sharing; and information use that allows the information generated in the first two stages to be collectively compared and evaluated for a common understanding and usage to materialize.

The first phase of Collective Information Seeking Behaviour (CISB) entails problem identification, which allows information seekers to identify their collective information requirements based on their common understanding. In an institution, people usually solve problems or meet information requirements and produce a shared representation of the problem to solve them via collective communication. A shift from individualised information-seeking activities to CISB was induced by a lack of domain capability, complexity of the information requirements, and fragmented information resources due to a lack of readily accessible information. At the second stage of activity, people's collective information-seeking behaviour helped to solve complex problems and achieve the shared goal. Karunakaran, Spence, and Reddy's (2013) model was based on the premise that CIS comprised three micro levels: Seeking, retrieving and sharing. In the final stage, the information obtained in the first two phases was also collectively compared and evaluated to develop a common understanding and use.

This study applied Karunakaran, Spence, and Reddy's (2013) model primarily because it delineates the challenges information users face during the collective information seeking process (as in stage three, which indicates unmet information requirements of users group).

The following Figure 1.1 shows Karunakaran, Spence, and Reddy's (2013) model used in this study:

Figure 1.1: Karunakaran, Spence, and Reddy's (2013) model of Collective Information Seeking

Source: Karunakaran, Spence, and Reddy, 2013.

3. Findings

3.1 Challenges Encountered by Student Groups during Collective Information Seeking

This study sought to determine barriers faced by RHLI student groups during the collective information-seeking process in RHLI. Barriers were the challenges faced by RHLI student groups districts during CIS to access the collective information of student groups when they were given assignments to accomplish. The findings acquired through face-to-face interview, focus group discussions as well as observation exposed the following key barriers: unreliable internet to RHLI, low IL skills among RHLI student group members, absence of ICT equipment to vocational training institutions, absence of information on protective gears and working tools, no information on reference professional items, different level of experiences to RHLI student group members that led on different understanding of information retrieved during CIS, no policy or framework that guide RHLI student groups during CIS, disagreement on selection of information among the massive retrieved information collected to student group members, low concentration of some students group members during CIS, no databases for their areas of specialization, no subject librarians who required to assist student groups during CIS and absence of E-resources to RHLI courses.

The interview, focus group discussions and observation findings exposed the following key barriers:
1) Unreliable internet to RHLI,
2) Low IL skills among RHLI student group members,
3) Absence of ICT equipment in vocational training institutions,
4) Absence of information on protective gear and working tools,

5) No information on reference professional items,

6) Different experience to RHLI student group members that led to different understandings of information retrieved during CIS,

7) No policy or framework that guides RHLI student groups during CIS,

8) Disagreement on the selection of information among the massive retrieved information for the RHLI student group members,

9) Low concentration of some RHLI student group members during CIS,

10) No subject librarians are required to assist RHLI student groups during CIS,

11) Lack of e-resources for RHLI courses, and

12) Complex language is used for professional materials.

The following is the table summary of interview results (Table 1.1) represented the challenges encountered by RHLI student groups during the CIS process:

Table 1.1: Frequency distribution with percentages of respondents based on challenges faced

Challenges Faced by RHLI Student Groups (N=18)	Frequency	Percentage (%)
Different levels of experience during CIS among RHLI students	2	11.2%
Disagreement on massive retrieved information during CIS	3	16.7%
Low concentration of RHLI students during CIS	3	16.7%
Absence of ICT equipment	3	16.7%
Insufficient information on protective gears	8	44.4%
Low skills and time lapse during CIS	17	94.5%
Absence of practical information for reference	3	16.7%
No policy or framework that guides RHLI students during CIS	13	85%
Absence of subjects librarians	11	61.1%
No information for professional materials	11	61.1%
Lack of E-resources	4	22.3%
Complex language for professional materials	2	11.1%
Unreliable internet during CIS	5	27.8%

As Table 1.1 above illustrates, RHLI respondents during interviews from different programmes encountered challenges during CIS to accomplish the group assignments in colleges A, B and C of RHLI. RHLI respondents from RHLI in rural areas faced one of the major challenges of having low skills and time lapsed during CIS (94.5%, n= 17). The other major challenge was the absence of a policy or framework that guides RHLI students during CIS (85%, n=13). The absence of subjects librarians to assist RHLI student groups during CIS (61.1%, n=11) was tied with the absence of information for professional materials (61.1%, n=11). Insufficient information on protective gears (44.4%, n=8) in RHLI courses, unreliable internet during CIS (27.8%, n=5) and lack of e- resources (22.3%, n=4) were the challenges faced by RHLI student groups to accomplish group assignments. Also, interview findings show that RHLI student group members faced both challenges of disagreement on massive retrieved information during CIS, low concentration of RHLI students during CIS and absence of ICT equipment (16.7%, n=3). Moreover, RHLI students encountered the challenge of complex language used for professional materials (11.1, n=2) and different levels of experiences and understanding on how to search for

information among RHLI students (11.1%, n=2) at the same level to accomplish the group assignments given.

The following is the table summary of focus group discussions (FGD) results (Figure 1.2) represented the challenges encountered by RHLI student groups during the CIS process:

Figure 1.2: The challenges faced by RHLI student groups during CIS
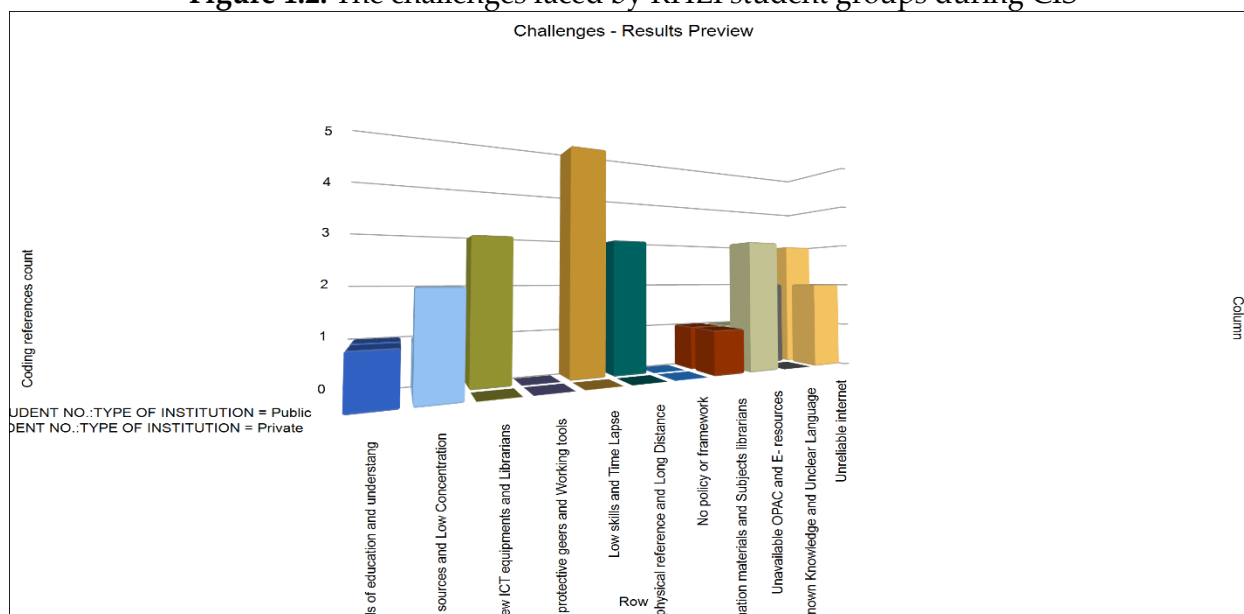

Figure 1.2 above illustrates FGD results on low skills among RHLI students, and time lapse was the major challenge faced by RHLI during CIS. Other major challenges mentioned by RHLI respondents during FGD were: absence of ICT equipment, lack of information on professional reference materials for group work, complex language used for group assignments given and unavailability of e-resources to some RHLI courses.

The barriers faced by RHLI student groups during CIS were also quoted from respondents during face-to-face interviews as follows:

One of the respondents during the interview in RHLI B explained that:

"RHLI students face the challenge of not having an RHLI policy, which directs RHLI students in case they have ideas or knowledge for creating items which are useful for the whole community. In RHLI rural institutions, RHLI students have ideas for creating items which are important for the community, but there is no RHLI policy specific to RHLI students' item creativity that guides us. This leads RHLI students to find nowhere to implement our ideas or tacit knowledge for creativity." [RHLI B, Student No.1].

Another respondent during the interview, when asked to explain the barriers faced by RHLI student groups during CIS in RHLI C, was noted lamenting by saying:

"RHLI libraries lack the professional databases for RHLI students to accomplish the group assignments given. This makes our academic life very difficult. Additionally, there is not enough protective information for other RHLI courses offered in our RHLI libraries. This led RHLI student groups exposed to a dangerous and unsafe environment during practical group assignments given" [RHLI A, Student No.3]

The researcher observed the investigated RHLI courses trained on how to search for information on the internet. The RHLI respondents were not trained on how to evaluate the different retrieved information to accomplish the group assignments given. RHLI respondents were also observed not familiar with the application of other advanced information searching techniques, like using of Boolean operators and truncation. Moreover, RHLI respondents were also not using any criteria for evaluating massive retrieved information to meet the groups' information requirements.

This study was undertaken to probe the collective information seeking of RHLI student groups in rural libraries. The following are the major challenges faced by RHLI student groups during CIS when accomplishing group tasks:

3.1.1 Unreliable Internet to RHLI Rural Institutions
Unreliable internet to RHLI (28%, n=5) was one of the major challenges that RHLI respondents mentioned during interviews conducted in colleges A, B, and C. RHLI respondents from college A, B, and C admitted that unreliable internet hindered them from meeting their collective information requirements during CIS in RHLI.

3.1.2 Low IL Skills among RHLI Student Groups Members
Face-to-face interviews revealed low information literacy (IL) skills (90%, n=17) to RHLI student groups members as one of the major challenges to meet their groups' information requirements during CIS.

3.1.3 Lack of Access to ICTs
Few ICT equipment (16.7%, n=3) to the RHLI in college A, B and C was mentioned by respondents as the major challenge during face-to-face interview. The computers were not enough for all students to access information during CIS. RHLI student groups from RHLI A, B and C were forced to access computers in shifts to accomplish their group assignments.

3.1.4 Absence of Practical Information for Professional Items
The interviewees from the auto-electrical course in college C pinpointed the absence of practical information for professional materials (61%, n=11). Practical information was found vital to meet their collective information requirements to accomplish the group assignment during face-to-face-interview.

3.1.5 Lack of Information on Protective Gears

Information on protective gears was observed not comprehensive for the courses of welding and metal fabrication, domestic electrical installation and auto-electrical. This was evident from the findings (44%, n=8) revealed by RHLI students during the interview, who mentioned the challenge of information on protective gears was not comprehensive, as faced by all RHLI respondents who were interviewed from domestic electrical installation, auto electrical, welding and metal fabrication courses.

3.1.6 Absence of Policy or Framework to Guide RHLI Student Groups during CIS

The findings revealed that there was no policy or framework that guided RHLI student groups. This seemed difficult in case the RHLI group want to innovate new items or come up with new ideas as the source of creation for new items during CIS.

3.1.7 Disagreement on Selection of Appropriate Retrieved Information on the Internet

There was massive information retrieved on the internet during CIS when RHLI student groups were given collective assignments to accomplish from institutions A, B and C. The observation findings showed that RHLI student group members of institutions A, B and C failed to evaluate massive retrieved information. The disagreements on which information was suitable for their queries were the main challenge for RHLI respondents to select appropriate information. The disagreements about which information was appropriate to respond to the query led the RHLI group members to observe calling the librarian for clarification.

3.1.8 Absence of Subject Librarians to assist RHLI Student Groups during CIS

The interview findings revealed that the respondents from RHLI student groups mentioned the absence of subjects librarians (61%, n=11) during CIS were among the hindrances to meet their collective information requirements (See Table 1.1). The RHLI respondents who were interviewed explained that subjects librarians could better understand their collective information requirements, which responded to their group assignments. The researcher observed student group of plumbing and pipes fitting course in college A in Babati district, requesting the subject teacher to go to the library to give RHLI respondents more clarification of the searching query. RHLI respondents failed to understand the information requirement of the query given as the group assignment. Thereafter, the RHLI student group proceeded with the information searching after they got more clarification of the group assignment given during CIS.

3.1.9 Unavailability of E-resources

The FGD findings from RHLI B and C revealed that there were no electronic reference information materials for their courses to be referred to when RHLI student groups were given group assignments to accomplish. FGDs showed that RHLI respondents failed to complete the assigned group tasks on time due to the unavailability of required electronic

information resources. Different electronic information sources were compulsory for RHLI student groups to accomplish their collective assignments.

3.1.10 Differences in Experiences among RHLI Respondents

During FGD in college C, RHLI respondents pinpointed that different experiences amongst respondents led to different understandings of information retrieved. Other RHLI students during FGD in college A directly admitted that RHLI students were admitted with ordinary level qualifications, while others were admitted in rural RHLI with standard 7 qualifications. FGD findings in colleges B and C revealed that differences in experiences among RHLI students led time lapse in teaching their fellow colleagues during CIS. RHLI students with standard seven qualifications became more experienced during CIS compared to those who came directly from schools with ordinary qualifications. Furthermore, RHLI students with more experience observed applying alternative of information searching techniques in their fields of specializations during CIS.

3.1.11 Lack of Documented Tacit Knowledge in RHLI Libraries

Lack of documented tacit knowledge in RHLI libraries settings was noted during FGD. The RHLI respondents were relying more on explicit knowledge (78%) to accomplish the group assignments because the tacit knowledge was not found in the library settings. RHLI respondents required tacit knowledge (67%) to solve the problem associated with the group tasks. Although there was high-level usage of explicit knowledge (78%) in various RHLI libraries settings, the usage of tacit knowledge (67%) was still low. Low usage of tacit knowledge was caused by the challenge of a lack of documented tacit knowledge in rural RHLI libraries.

3.1.12 Unreliability of Electricity

During the FGDs, RHLI students mentioned that power cuts and unreliability of the electricity supply hindered access to information during CIS.

3.2 Solutions to Improve Collective Information Seeking

One of the specific objectives of this study is to recommend the appropriate solutions to the challenges faced by RHLI student groups during CIS. Table 1.2 below portrays the results of the interview and focus group discussion (FGD) from RHLI A, B and C, which shows the recommended solutions to the major challenges faced by RHLI students:

Table 1.2: Solutions to Challenges Faced by RHLI
Students during Collective Information Seeking

Solutions Required to Challenges	Frequency	Percentage (%)
Availability and assistance from subject librarians	3	17%
Groups' assignments searching strategies	8	44%
Improving internet	5	28%
Co-operation among RHLI student groups	2	11%
Documenting tacit knowledge	2	11%
Availability of practical information	2	11%
Availability of ICT equipment	5	28%
Usage of simple language	2	11%
Allocation of special rooms for group discussions	2	11%
Subscribed databases	4	22%

The majority of RHLI respondents (44%, n=8) suggested that RHLI students be equipped with information searching strategies to meet their collective information requirements during the CIS process (See Table 1.2). The central finding in this study is that IL skills are centripetal during information seeking in enabling students to seek, locate, retrieve, evaluate, share and utilise information to meet their information requirements. This study corroborates the findings by Liu *et al.* (2024), who investigated information literacy of higher vocational college students in the digital age, and found that the session has significantly improved the RHLI students grasp certain aspects of IL skills.

Moreover, the findings of this study revealed that the reliability of the internet (28%, n=5) to RHLI rural institutions was vital for RHLI student groups to access collective information to accomplish groups' tasks given during CIS. This finding shows RHLI districts required to ensure the availability of ICT equipment (28%, n=5). RHLI respondents pinpointed that subscribed databases (22%, n=4) are required to be subscribed to for RHLI courses offered in RHLI; subscribed databases are compulsory for RHLI students to access information for their collective assignments. However, RHLI respondents from this study recommended in the same level during interview and FGD that, co-operation among RHLI student groups members during CIS process (11%, n=2) was required to accomplish group assignments, documenting tacit knowledge in RHLI libraries is vital to allow access to information (11%, n=2), availability of practical information (11%, n=2) in RHLI, usage of simple language to the group assignment given (11%, n=2) and allocation of special rooms for RHLI student groups during discussions in RHLI libraries premises was vital to accomplish group assignments where RHLI students could share skills and experiences during CIS process.

4. Discussion

4.1 Unreliable Internet to RHLI Institutions
Unreliable internet to VET rural institutions (28%, n=5) was one of the major challenges that RHLI respondents mentioned during interviews conducted in colleges A, B and C. RHLI respondents from institutions A, B and C admitted that unreliable internet

hindered them from meeting their collective information requirements during CIS in RHLI libraries. These findings concurred with those of Mwinyimbegu (2018), who showed that inadequate bandwidth (67.3%, n=35) among selected public university libraries in Tanzania hindered library users from meeting their information requirements. Similar findings by Liman (2022) showed that (46%, n=39) of respondents reported that poor provision of library services was caused by poor internet services among academic libraries in Gombe State in Nigeria. Similarly, the problem that most of the postgraduate students interviewed indicated was inadequate bandwidth when they attempted to utilise the Unisa online resources in South Africa, when Desta, Preez and Ngulube (2019) investigated the factors influencing the information-seeking behaviour of postgraduate students.

Observation findings by Scholarstica, Nkeiru and Obinna (2018) revealed that internet connectivity was usually shut down during the weekend at Federal University in Kashere, while in Gombe State Universities, library users found it difficult to access e-resources outside the library building. During the interview, RHLI respondents mentioned that unreliable internet in RHLI had a negative impact on RHLI student groups' ability to acquire the knowledge required to accomplish the group assignments given in RHLI.

Similar findings to this study by Thindwa, Chawinga and Dube (2019) reported a number of challenges to undergraduate security studies students in Malawi, one of them was poor internet access that affected students' academic activities to accomplish assignments, prepare for their examinations and complete research projects. Thindwa, Chawinga and Dube (2019) argued that the internet is becoming a popular source of information in the 21st century; hence, there was a need to provide e-support that would also reduce the problem of internet access and enhance their information search process, thereby improving the overall quality of education.

These findings were supported by a study on information-seeking behaviour of distance learning students at Mzuzu University in Malawi by Chawinga and Zozie (2016), which found that 207 (80.5%) students used the internet as a source of information. The internet is an important source of information; it offers formal access to current, quality and relevant information (Asibey, Agyemang and Dankwah, 2017). This study concludes that the internet is important to VET students when searching for information.

4.2 Low IL Skills among RHLI Student Group Members

Face-to-face interviews revealed low information literacy (IL) skills (90%, n=17) among RHLI student group members as one of the major challenges to meet their group's information requirements during CIS. Similarly, findings by Luambano (2016) showed that undergraduate distance learning students in Tanzania contended with the problems of a lack of awareness of online resources and skills for them to search on the web effectively. Reviewed literature found that IL education had remained a non- priority area in many institutions of higher learning (IOHL) and in many cases was not even taught as effectively as it should be. In fact, the last two decades have witnessed growing

global interest in IL for students, professionals, and citizens. As IL skills for students of higher learning would help to equip them with the requisite information literacy skills that could facilitate their seeking, retrieving, and sharing of information to meet their information requirements. The interest in IL acquisition and mastery stems from problems that information users experience when they attempt to navigate the current complex web of information environment pertaining to problem-solving and decision-making processes. In this regard, institutions of higher learning (IOHL) serve as facilitators of information literacy acquisition. However, Klomri and Tedre (2021) found that the number of postgraduate students at the University of Dar-es-salaam in Tanzania mentioned PDF documents as trustworthy, as one student explained:

"First, you enter your words and then 'PDF', then you click 'Search', and the information that appears there is trusted." Interview findings were supported by Pitocco (2013), who revealed that some participants in the United States of America lacked computer skills, and some did not know what information was available. Participants also reported that they cannot access information due to a lack of knowledge on using new technology (Pitocco, 2013). However, Asher and Duke (2010) concurred with the findings of this study that undergraduate students in the United States of America could not adequately translate their information requirements into an effective search request. Thindwa, Chawinga, and Dube (2019) showed that undergraduate security students in Malawi lacked online information literacy skills to accomplish the given assignments. Simiral findings by Thindwa, Chawinga, and Dube (2019) showed that students have poor online literacy skills; hence, they are overwhelmed by the amount of information available on the internet. RHLI libraries plays important role in ensuring RHLI student groups acquire necessary IL skills during the CIS process to accomplish the group assignments given. Mwinyimbegu (2018) summarised that it goes without saying that maximum utilization of Open Educational Resources (OER) depends very much on information literacy skills, which libraries offer to their users.

4.3 Lack of Access to ICTs

Few ICT equipment (16.7%, n=3) to the RHLI of college C, college A and college B in was mentioned as the major challenge during face-to-face interview. The computers were not enough for all students to access information during CIS. Student groups from institutions A, B and C were forced to access computers in shifts to accomplish their group assignments.

Thindwa, Chawinga and Dube (2019) reported similar findings to this study that undergraduate security students in Malawi faced the challenge of a shortage of computer laboratories for academic activities, accomplishing assignments, preparing for their examinations and completing research projects.

4.4 Absence of Practical Information for Professional Items

The interviewees from the auto-electrical course in college C pinpointed the absence of practical information for professional materials (61%, n=11). The practical information

was found vital to meet their collective information requirements to accomplish the group assignment during the face-to-face interview. For example, the information on the car gearbox was not available in the library when student groups of auto-electrical course required reference during CIS. One of the RHLI respondents pursuing an auto-electrical course of college C during the interview, declared that the knowledge retrieved from the library was mainly theory. Another respondent in college C stated that, as a result, group members are compelled to go to the garage in the streets outside the library to acquire practical information. This helped RHLI students to learn parts of the gearbox and how it functions. The availability of practical information to RHLI student groups is crucial basing on the nature of the assignments given to RHLI students, which are practical-oriented (Abeid, Jorosi and Mooko, 2025).

4.5 Lack of Information on Protective Gears

Information on protective gears was observed not comprehensive for the courses of welding and metal fabrication, domestic electrical installation and auto-electrical. This was evident from the findings (44%, n=8) revealed by RHLI students during the interview, who mentioned the challenge of information on protective gears was not comprehensive, as faced by all RHLI respondents who were interviewed from domestic electrical installation, auto electrical, welding and metal fabrication courses. Information on protective gear was cited as inadequate by interviewees of domestic electrical installation, welding and metal fabrication, and auto-electrical courses. Insufficient information on protective gear led some RHLI respondents to observe not using protective gear when doing their group assignments. Similar findings from Abeid, Jorosi and Mooko (2025) reveal that information on protective gear in RHLI libraries is vital to protect VET students from accidents during practical assignments.

4.6 Absence of Policy or Framework to Guide RHLI Student Groups during CIS

The findings revealed that there was no policy or framework that guided VET student groups in Lushoto, Babati and Kondoa districts. This seemed difficult in case the VET group want to innovate new items or come up with new ideas as the source of creation for new items during CIS. Nonetheless, Mwinyimbegu (2018) stated that (69.2%, n=36) of the respondents said the lack of policies and guidelines in public universities in Tanzania to guide the use of Open Educational Resources (OER) was a major challenge and should be taken into consideration. Samzugi (2017) found that policy is important, theoretically guiding best practices.

4.7 Disagreement on Selection of Appropriate Retrieved Information on the Internet

There was massive information retrieved on the internet during CIS when RHLI student groups were given collective assignments to accomplish from colleges A, B and C. The observation findings showed that RHLI student groups members of colleges A, B and C failed to evaluate massive retrieved information. The disagreements on which information was suitable for their queries were the main challenge for RHLI respondents

to select appropriate information. The disagreements about which information was appropriate to respond to the query led the RHLI group members to observe calling the librarian for clarification. Observation findings with Cheng (2017) revealed that specialized training for preparing novice researchers in Taiwan is critically required to evaluate relevant information or scholarly work to fulfill their research purposes. Similar findings from Ma (2017) showed that many students in the study demonstrated insufficient information literacy (IL) knowledge and skills in some specific contexts of seeking and using information to meet the users' information requirements on the internet.

Mason (2019) showed that undergraduate students in California developed limited topics but sometimes ended up with too much information; thereafter, failed to evaluate the retrieved information according to their information requirements. Furthermore, Mason (2019) explained that first-year college students in California were unable to identify differences between major and minor points during the search process due to information overload (Mwantimwa, Mwambungulu and Kassim, 2021). This was the reason why RHLI respondents disagreed on the selection of appropriate retrieved information on the internet.

4.8 Absence of Subject Librarians to assist RHLI Student Groups during CIS

The interview findings revealed that the respondents from RHLI student groups mentioned the absence of subjects librarians (61%, n=11) during CIS was among the hindrances to meet their collective information requirements (see Table 1.1). The RHLI respondents who were interviewed explained that subjects librarians could better their collective information requirements, which responded to their group assignments. The researcher observed a student group of plumbing and pipe fitting course in college A in Babati district requesting the subject teacher to go to the library to give RHLI respondents more clarification of the searching query. RHLI respondents failed to understand the information requirement of the query given as the group assignment. Thereafter, the RHLI student group proceeded with the information searching after they got more clarification of the group assignment given during CIS.

The interview findings of this study concurred with the findings of Saleh and Large (2011), who investigated the undergraduate students in Montreal, Quebec. Saleh and Large (2011) revealed that contextual factors, such as project topic, were found to have a major impact on the nature of the collaborative activities that undergraduate students undertook during their projects. The complexity of the project meant that undergraduate students had to use different types of information sources and also encouraged them to approach other experts in the field to refer them to the relevant information, as undergraduate students perceived these experts to have more subject knowledge and professional expertise (Saleh & Large, 2011). Saleh and Large (2011) concurred with the findings from Fena (2020), which showed that choral directors in New York required librarians and other information professionals to help the group (choral directors) to use the required information to discover new repertoire, plan concert

programs, improve rehearsals and support other relevant activities. Furthermore, information scientists helped the choral directors to provide access to professional music networks and to be creative in providing opportunities for serendipitous information discovery (Fena, 2020).

Furthermore, Ghazal, Wright and Al-Samarraie (2020) investigated conceptualization factors affecting collaborative knowledge building in Malaysia and the United Kingdom. Ghazal, Wright and Al-Samarraie (2020) showed factors related to interaction and participation. The collaboration from information seekers and support from information providers were found to be the major factors driving students' knowledge building in the online collaborative learning environment (Ghazal, Wright and Al-Samarraie, 2020).

4.9 Unavailability of E-resources

The FGD findings from RHLI B and C revealed that there were no electronic reference information materials for their courses to be referred to when RHLI student groups were given groups' assignments to accomplish. FGDs showed that RHLI respondents failed to accomplish the given group assignments on time due to the unavailability of required electronic information resources. Different electronic information sources were compulsory for RHLI student groups to accomplish their collective assignments.

These findings are consistent with He (2012), who stated that undergraduate students in China and the United States of America used different electronic information resources for various academic tasks. In their tasks, online electronic resources, including search engines, were the most commonly used resources, particularly for complex academic tasks. Students in collaborative tasks looked for resources that made it easy to share documents (He, 2012). Zimmer (2012) agreed with the argument that knowledge flows along the relationship line of electronic information resources. Koh (2012) argued that the nature of electronic information resources and technologies had an impact on shaping youth information-seeking behaviours in the United States of America. In addition, digital age youth preferred the dynamic, flexible, and interactive nature of electronic information resources or technologies during the information searching process (Koh, 2013). Ruan (2012) corroborates that participants in the United States relied extensively on multiple types of electronic information sources while seeking and sharing information during the instructional process. Saumure *et al.* (2012) summarised and said that electronic information resources were key to these students' information-seeking successes.

4.10 Lack of Documented Tacit Knowledge in RHLI Libraries

Lack of documented tacit knowledge in RHLI libraries settings was noted during FGD. The RHLI respondents were relying more on explicit knowledge (78%) to accomplish the group assignments given because the tacit knowledge was not found in the library settings. RHLI respondents required tacit knowledge (67%) to solve the problem associated with the group tasks given. Although there was high-level usage of explicit

knowledge (78%) in various RHLI libraries settings, the usage of tacit knowledge (67%) was still low. Low usage of tacit knowledge was caused by the challenge of a lack of documented tacit knowledge in RHLI libraries. This was supported by Lai (2012), who notes that, before we start a knowledge-seeking process, we normally obtain some knowledge (tacit knowledge), which could be seen as existing knowledge in the mind. Based on our existing knowledge, we could be aware of problems when we were faced with a project or a task to accomplish (Lai, 2012). RHLI respondents are required to share knowledge to accomplish the groups' assignments. Knowledge sharing refers to the exchange of explicit or tacit knowledge, ideas, experiences or skills from one individual to another, student or group of students (Chen, Tan, and Pi, 2021).

However, Desta, Preez and Ngulube (2017) revealed a related challenge to this study: the library information collection in the University of South Africa seemed not to provide adequately for most of the postgraduate students' information requirements. However, the print collection did not seem to cover all subject areas. For example, the resources available for geography, education, and performance management studies did not support students in acquiring basic theoretical and conceptual insights (Desta, Preez and Ngulube, 2017). There was a need to extend the library's collection to include these resources (Desta, Preez and Ngulube, 2017).

4.11 Unreliability of Electricity

During the FGDs, RHLI students mentioned that power cuts and unreliability of the electricity supply hindered access to information during CIS. Similar findings from Nihuka and Voogt (2012) noted the power cuts and unreliability in the electricity supply, and narrow bandwidth were experienced as a challenge by all instructors when investigating the collaborative e-learning in the Open University of Tanzania. Nihuka and Voogt (2012) showed that unreliability of electricity hampered the writing of courses, the uploading of courses and resources into Moodle and handling e-mails. When there was a power cut, users had to wait until there was electricity and an improved internet signal (Nihuka and Voogt, 2012).

5. Recommendations

The study recommends that RHLI libraries be required to subscribe to professional databases for VET courses offered in rural district settings. This ensures the efficient availability of collective information to RHLI student groups when given group assignments to accomplish.

Subscription to professional databases ensures the availability of e-resources for RHLI student groups, meeting their collective information requirements.

There is no doubt that RHLI student groups in RHLI areas require CIS policy during the CIS process.

IL skills were required by RHLI student groups to accomplish group assignments.

RHLI libraries require improving the internet to boost the high usage of explicit knowledge. Corresponding results by Bashorun (2016) recommended that university authorities should upgrade the internet bandwidth in order to increase the speed of internet connectivity for easy downloading and uploading of scholarly content.

Moreover, RHLI libraries are required to set aside special rooms for RHLI student groups' discussions. Special rooms for RHLI student groups' discussions are vital to facilitate student groups sharing their practical information for the group assignments.

The hypothesized model is crucial for improving CIS of RHLI student groups in the presence of both CIS policy and IL skills, as illustrated in Figure 1.3.

Figure 1.3: Hypothesized Model of CIS to RHLI Student Group
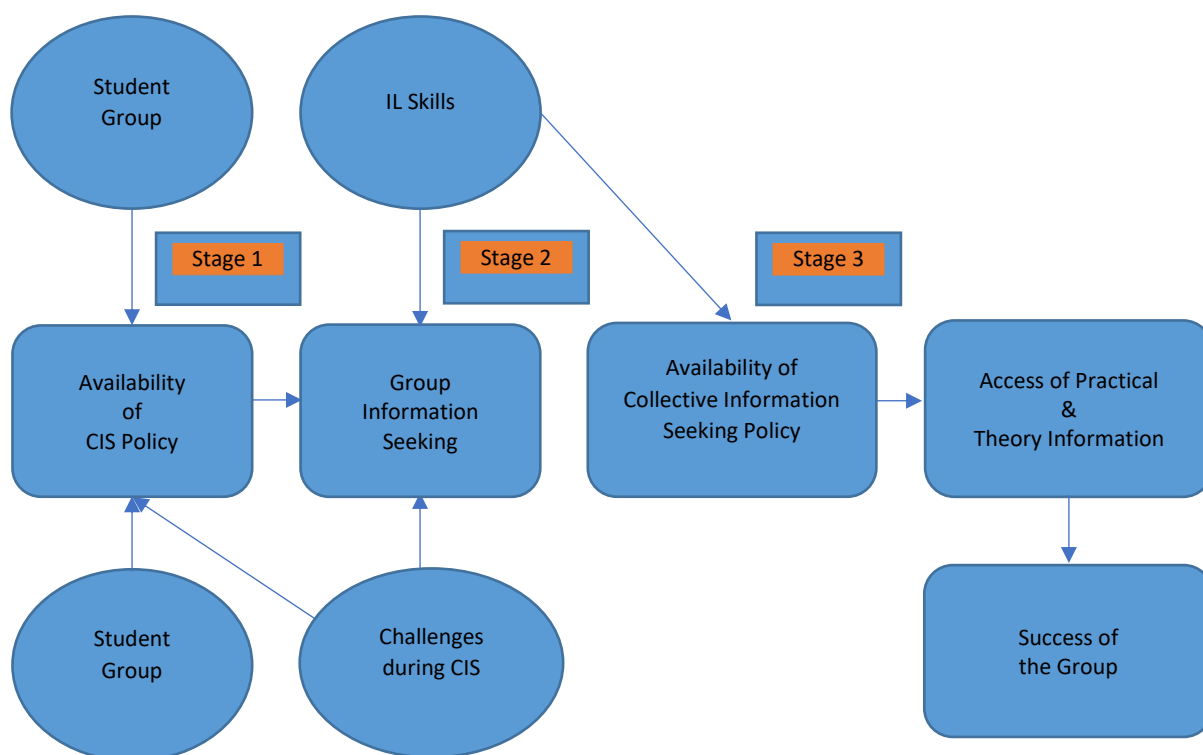
The proposed model above (Figure 1.3) of this study, which comprised three (3) phases (stages), was modified from Karunakaran, Spence, and Reddy's (2010) model. Thus, the Karunakaran, Spence, and Reddy's (2013) model was anchored to conduct this study on collective information seeking (CIS) of RHLI student groups.

Phase one of the model represented CIS policy required of student groups during the CIS process when RHLI student groups seek information collectively to satisfy their group information requirements. RHLI student groups required CIS policy that stipulates the importance of the application of required IL skills to RHLI student groups during the CIS process to accomplish the group assignment. This phase entailed collective problem identification (collective assignment), and it is directed at how to solve it through CIS policy. In this stage, the collective information requirements to finish the

group assignment are identified. Phase two shows the actual process of CIS to RHLI student groups. Under this phase, the groups required IL skills for solving the collective assignment. The available practical and theoretical information was then collectively retrieved and shared when the student group had at their disposal the information literacy (IL) skills, such as information seeking strategies to meet their collective information requirements. However, in phase two, the group faces challenges of accessing practical and theoretical information for accomplishing groups' tasks in the absence of required IL skills.

Also, groups could effectively retrieve information if there were no challenges (lack of information literacy skills) they encountered during the collective information seeking process. Otherwise, any challenges the group encountered during the collective information-seeking process could torpedo the collective assignment. However, the challenges the student group encountered did not reach phase three, the final phase in the series, which could be attributable to a lack of information (Practical and theoretical information) in solving the problem identified in phase one when implementing the CIS policy. The retrieved collective practical and theoretical information is essential in solving problems associated with the shared group assignments.

Moreover, if the group faced any challenges (Lack of IL skills) during the collective information seeking process, the group would have to restart the process of collective information seeking all over again, which naturally would prevent them from reaching the pinnacle of such searches phase three. After all, this final phase required student groups collectively seek information to solve the problems associated with their shared assignment, when RHLI student groups have required both collective practical and theoretical information, which this phase could engender to enable student groups to accomplish group assignments.

This hypothesized model of CIS to RHLI student group is supported by Ganaie and Khazer (2014), who showed the trends of information seeking behavior research that the current researchers must study information requirements and information literacy dimensions together. Furthermore, there is a strong link between IL skills and accessing collective information (both theory and practical information) to RHLI student groups during the CIS process.

6. Conclusion

This study was undertaken to probe the challenges encountered by RHLI student groups during collective information seeking in Tanzania's rural libraries. After considering relevant theory and empirical work on CIS, this study identified possible ignored challenges encountered by RHLI student groups during the CIS process that cause the failure in accessing collective information requirements. IL skills and reliable internet are the vital aspects during the CIS process. IL skills were found to be the cross-cutting challenge among all RHLI respondents during collective information seeking (CIS). RHLI students could not get the collective information requirements in the absence of

information seeking skills, as it was mentioned by 17 RHLI respondents (90%). The results show that neither truncation 0 (0%) nor Boolean operators 0 (0%) was applicable since the information search strategies were applied by all the RHLI respondents during CIS in institutions A, B and C.

Moreover, interview and FGD results show that the absence of a policy for CIS, unavailability of subject librarians during CIS and information on the professional reference materials were the major challenges mentioned by RHLI students to accomplish group assignments given during CIS. The absence of information and communication technology (ICTs) equipment was also another challenge faced by RHLI students in RHLI for accessing collective information during CIS.

Theoretical Implications

This article established a theoretical model that assists RHLI student groups during CIS to understand the importance of the availability of the CIS policy for RHLI student groups, which allows the sharing of information and experiences to accomplish group assignments given when seeking information collectively.

Practical Implications

This study establishes the benchmark for RHLI student groups in sharing information and experiences during the CIS process. Moreover, this study pinpointed the importance of collective IL skills during the CIS process to RHLI student groups in rural library settings. The required collective IL skills during the CIS process help to meet RHLI student groups' collective information requirements for accomplishing student group assignments, which are practical-oriented.

Data Availability

The data supporting the findings of this article are available on request from the author. The data are not publicly available because they contain information that could compromise the privacy of research participants.

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Conflict of Interest Statement

The author declares no conflicts of interest.

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