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Abstract

Emotions form a part of the individual variables that play a key role in the determination of information seeking behaviour of an individual. Anxiety and uncertainty characterize the initial phases of the process of searching for information. The affective indications of uncertainty, frustration, and confusion lead to vague and imprecise thoughts regarding a problem or topic. However, a shift to focused knowledge leads to a decline in uncertainty and increase in confidence. The current study relies on a single holistic case study in which students of Manchester Metropolitan University are the case and their emotional response to search. Consequently, the study follows a descriptor-explanatory design that involves the description of the phenomenon through a review of literature and explanations of such occurrence through primary data collected via interviews with participants. The researcher conducted face-to-face interviews for individual. The findings confirm earlier observations regarding the emotional response to the search process during the initial stages. As indicated by several respondents, the initial stages of searching are complicated because of the uncertainty about the topic and the vagueness of thoughts. At this stage, the respondents confirm their need for information, which occurs through the identification of the research gap and the search for background information. Apprehension at this stage emanates from the confusion regarding the lack of focus on the search of information. This work is a continue research on emotions, within the context of library and information management.
1. Introduction

The concept of emotions is well-understood in relation to sensorimotor and cognitive perspective, but has no explicit definition in Library Information Science, (Lopatovska 2009). Emotional states in Library and Information Science are referred to as “affect”, “emotions”, “subjective states”, or “feelings.” However, emotion research theorists have come up with distinct meanings of each of the terms to avoid confusion. However, the definition of emotions is beyond the scope of this paper. Consequently, the paper uses the terms affect, feelings, and emotions almost interchangeably. According to Dinet et al, (2012), several variables affect information seeking behaviour of an individual. Some of them include contextual variables, resource variables, and individual variables. Emotions form a part of the individual variables that play a key role in the determination of information seeking behaviour of an individual. Emotions are among the elements that Kuhlthau discusses in her model. In the mid-90s, authors such as Nahl and Tenopir (cited in Dinet et al. 2012) highlighted the role of affective elements in information-seeking behaviour. Kuhlthau’s ISP model highlighted two components of affective factors: physical and/or cognitive actions and strategies used in dealing with unique features of the problem associated with the search for information. The model highlights the role of emotions such as frustration, anxiety, and uncertainty in the information seeking process.

Recent studies have tried to investigate the relationship between emotions and the performance of the searcher. For example, Kracker and Wang (cited in Dinet et al. 2012) investigated the correlation between anxiety and performance of learners in information search tasks. Based on Kuhlthau’s model, Nahl hypothesized the role of emotional factors on information retrieval and literacy. She observed that the psychodynamics of individuals’ information behaviour depend on their personality and social competence. Consequently, the emotional status of the individuals can contribute towards several outcomes such as search process problems, information adjustment problems, and personal information problems (Matteson et al, 2013).
The established theories show the affective component that interacts with information. Specifically, the process of identifying information need, locating the relevant information, making sense of the information, and using the information is associated to a plethora of emotions. Empirical research also supports the relationship between information behaviour and affect. Discrete emotions have played a significant role in student’s information behaviour. An empirical study conducted by Given (2012) on undergraduate students identified a set of macro and micro level events that resulted in either negative or positive emotions. The events causing emotions such as sadness, fear, alienation, joy, and surprise affected the student’s ability of searching for information and completing their assignments (Lisa 2007). A parallel study evaluated the socio-emotional development of high school students and their information literacy competence. The study found that emotional resilience and socio-emotional maturity affected the information literacy competence of the students (Lisa 2007).

On the same line of research, some researchers have investigated emotional intelligence and its effect on information seeking behaviour. According to Matteson et al. (2013), emotional intelligence entails the ability of an individual to monitor their emotions and feelings while discriminating them and using the information to guide one’s actions. According to Mayer and Solovey (2011), emotional intelligence involves the perception of emotions, use of the emotions to facilitate thinking, understanding the emotions, and managing the emotions. According to this model, individuals portray varying capabilities of processing information based on their emotional nature.

Kuhlthau highlights the specific emotions associated with the process of searching for information. According to Kuhlthau (1993), uncertainty is the principle emotions for information seeking. She defines uncertainty as the cognitive state that causes affective symptoms such as lack of confidence and anxiety. Anxiety and uncertainty characterize the initial phases of the process of searching for information. The affective indications of uncertainty, frustration, and confusion lead to vague and imprecise thoughts regarding a problem or topic. However, a shift to focused knowledge leads to a decline in uncertainty and increase in confidence. Kuhlthau (2004) asserts that the uncertainty associated with a gap in meaning, limited construct or lack of understanding initiates the information seeking process. Complex situations associated with information search was linked to uncertainty. However, Kalbach (2006) observes that the perceptions of complexity rather than the objective
complexity of the situation cause the feeling of uncertainty rather. Wilson (1999) confirmed the observation through his Uncertainty Principle.

Heinstrom relates the effect of emotions on information seeking behaviour to personality traits. The author uses the five factors model to explain the five main emotional factors that affect information seeking behaviour. Neuroticism refers to the level of emotional control and affects Heinstrom (2005). High levels of neuroticism indicate a high probability of experiencing negative emotions while low levels of neuroticism indicate emotional stability. Neuroticism heightens the probability of developing emotions such as anxiety. Highly neurotic individuals have a high likelihood of becoming sad, temperamental, unstable and worried. The element of neuroticism relates to the initial phases of the ISP model by Kuhlthau. The vagueness of information frustrates a highly neurotic person during the initial search. Essentially, neuroticism leads to nervousness and negative affectivity during the search for information.

A second crucial element related to information seeking behaviour is openness to experience. According to Heinstrom (2005), openness to experience entails the measure of breadth, depth, and variability of a person’s imagination and desire for experience. The factor relates to desire for new ideas, individual intellect, and creativity, as well as interest in cognitive and sensory experiences. Essentially, high openness to experience leads to broad interest. Consequently, an individual with a high openness to experience is likely to have the urge to seek for additional information to reduce the uncertainty brought about by lack of understanding of a topic.

While focusing on online search for information, Lopatovska highlights the relationship between emotional experiences and the information seeking behaviour and process. The state of the user before engaging in an active information search affects his or her emotional experiences Lopatovska (2009). The state depends on individual characteristics, cultural background, as well as attitudes and moods towards the search. Emotions affect behaviours such as the strategies used in the search, the search performance, the search process, as well as interest in the search process and information acquired Lopatovska (2009). A successful or unsuccessful completion of the search influences the emotional experiences, which, in turn, determine whether the user continues or terminates the search (Lopatovska 2009).
2. Literature Review

Emotions have a significant effect of information seeking behaviour. Most of the early studies conducted in library contexts have showed a significant link between emotions and information seeking behaviour. An early study by Mellon (1988) found that negative emotions hindered learning and effective information seeking. Consequently, the author suggested the use of library instruction programs for the mitigation of library anxiety. Onwuegbuzie and Jiao (2004) also found the library anxiety among students affected information search and performance negatively. Many studies have been conducted to evaluate the effect of emotions on users’ information seeking behaviour. According to Lopatovska (2009), emotional factors affect search strategies and performance, search results, motivation, and satisfaction. Nahl (1998) analysed information behaviour from the literature on affective and cognitive components of searching. The researcher found a positive relationship between affective variables and satisfaction, performance, and motivation. However, Wang et al. (2000) found a reciprocal relationship between affective variables and search performance. The findings indicated that positive feelings instigated further search while negative feelings hindered it. Nahl and Tenopir (1996) investigated the cognitive and affective aspects of information seeking behaviour among novice users. The study found that need for confirmation, hesitation, surprise, and fear affected the strategies that the users applied in the search process. For instance, the study found that the need for confirmation provided users with incessant motivation to continue their search while surprise initiated the process of reconciliation of the search expectations and reality. Butler and Cartier (2005) investigated the effects of emotions on processes such as reading, writing, researching and presenting. The study found that low interest in the process, low self-esteem, and high stress levels led to avoidance, which affected the processes negatively. Nahl (2005) studied the influence of affective variables on information seeking behaviour and found that emotions such as optimism and self-efficacy countered negative emotions such as frustration and irritation, which are associated with uncertainty.
Palmer (cited in Heinstrom 2005) describes different information behaviour according to anxiety or relaxation, and need of control, and under/oversupply of information among other factors. According to this classification, the author shows that the individual’s locus of control can affect his or her information seeking behaviour. An internal locus of control means that an individual has control over his or her emotions. Consequently, such individuals can engage in active and problem-focused search for information. Essentially, an active search for information can reduce uncertainty in complex information-seeking situations Heinstrom (2005). Heinstrom asserts that the inner locus of control has a relation to library use because it involves active search for information. However, researchers such as Hatchard and Crooker suggest that external factors influence information seeking behaviours in libraries than internal factors do.

Safahieh and Singh (2006) define information seeking behaviour as actions taken in the articulation, search, evaluation, and application of the information. Kakai et al. (2004) defined information seeking behaviour as the process of searching and utilizing information. Despite the broad and diverse definitions, many researchers contend that information seeking behaviour entails the actions that aim at filling the gaps identified in an individual's information needs (Brystrom and Jarvelin 1999; Kakai et al. 2004). According to Devi and Dlamini (2013), factors such as course, age, level, native language, and religion have a strong effect on information seeking behaviour of college students. The undergraduate students found the information seeking process highly intimidating. Consequently, the information seeking behaviour among many college students characterizes trial and error methods if the students fail to acquire basic information skills.

Different researchers have focused on diverse elements of information seeking behaviour among university students. Previous studies have delved the differences in the information seeking behaviour of local and international students (e.g. Abdoulay 2002; Dalglish and Chan 2005; Deumert et al. 2005; Jeong 2004; Liu Redfan 1997). The basic argument of the researchers is that the cultural differences expose international students to challenges that the local students do not face in information seeking. According to Deumert et al. (2005), a common challenge facing the search
for information among university students is the ability to access and select the relevant information when needed. Various challenges increase the complexity of searching relevant information. Consequently, the information seeking behaviour may be affected by self-confidence, emotions, and understanding of the problem (Hughes 2005).

Liu and Redfarn (1997) investigated the behaviour of multicultural students at Sa Jose State University. Using a questionnaire, the researchers sought to understand the effect of length of stay on the confidence of the students in seeking help from the reference desk. The study found that international students who had stayed in the country for over fifteen years had high levels of confidence and often sought help from the reference desk.

Fidzani (1998) conducted a study at the University of Botswana with the intention of determining the information needs and awareness of library services among the students. The researcher collected data from 144 respondents using a close-ended questionnaire. The study found a heavy reliance on library textbooks and journals as the main sources of information. The students relied chiefly on browsing through journals and scanning through shelves rather than checking indices and abstract databases for the location of information. Further, the study found a low reliance on the help offered by library assistants (40%).

Abdoulay (2002) investigated the information seeking behaviour of African students at the IIUM (International Islamic University of Malaysia). The study focused on the students’ awareness of library services as a source of information. The study found a heavy reliance on textbooks, periodicals, library books, and Internet services offered by the library. Shokeen and Kushik (2002) investigated the information seeking behaviour of social science students in several universities in Havana. According to the study, most social scientists visit libraries to gather information and use abstracting periodicals, citations in articles, and indexing in identifying relevant sources of information.

Calliman (2005) conducted a comparative study that investigated the information seeking behaviour of the first year and final year students of biology. Essentially, the study focused on the identification of the effect of the level of study on the confidence of the students in searching for information. The study found that the differences
between the information needs of the two groups dictated the channels used and their confidence in using the channels in searching for information.

Song (2005) compared the information seeking behaviour of local and international students at the University of Illinois. The study focused on the differences in perceptions of the use and perceptions of library services. The survey-based study found a significant reliance on library databases among international students. Song (2005) found that instruction sessions regarding library databases offered valuable information to international students. Consequently, the international students used the databases as the foundation of their search. Additionally, the students relied heavily on the help from librarians. Conversely, the results showed that local students rarely visited library but relied largely on electronic library resources from remote locations. A study by Online Computer Library Centre (OCLC) released in its white paper investigated the behaviour of students in seeking information in different channels. The study found that 70% of the surveyed students relied on library Web sites in completing their assignments. However, only 20% of them used the library Web sites for most of their assignments.

Qureshi (2008) studied the information seeking behaviour of students from several universities in Pakistan. The study aimed at identifying the factors that determine the behaviour of students in the information seeking process. The study found that the cultural and educational backgrounds of the students, as well and student participation and the environment have positive effects on students' information seeking behaviour. However, this depends on the suitability of the environment in fostering and enhancing the information gathering systems.

In furthering the literature on information seeking behaviour, Diamond et al. (2014) offer insights into the psychological underpinnings that characterize the behaviour among students. According to the authors, information seeking behaviour comprises of a plethora of effects that explain the behavioural patterns. Consequently, the authors explain the behaviour of students in their search for information based on their capacity for rationality. Basing the study on behavioural economics, the authors suggest, "People often make decisions on the basis of partial information under conditions of uncertainty." According to Simon (1997), people seldom have access to accurate information and do not have an unlimited information-processing capacity.
From this perspective, Diamond et al. (2014) argue that the limitations of students' cognitive abilities may lead them to make decisions that are merely satisfactory rather than decisions that maximize the utility of the outcomes. The authors argue that students could understand non-rational behaviour as rational based on the complexity of the problem. Additionally, the authors observe that people tend to seek an approximate answer quickly when they face complex problems. Essentially, some students are likely to seek approximate answers when they fail to develop adequate optimism and confidence in their search process. A study by Tversky and Kehneman (cited by Diamond et al. 2014) found that the first piece of information that students acquire has an “anchoring effect”, which results in availability bias. Availability bias entails the judgment that the readily available information is relevant.

Diamond et al. (2014) also discuss the concept of information overload on student’s information behaviour. Although earlier models suggest that a continuous search for information increases optimism and confidence, Diamond et al. (2014) argue that the limitations of the amount of information that a person can process may reduce confidence and lead to errors. Information overload may elicit information anxiety. Diamond et al. (2014) describe information anxiety as a condition that occurs when the information acquired does not tell one what he or she intends to know. Although the lack of information may contribute to information anxiety, Diamond et al. (2014) argue that the inability to perceive the meaning of information may also contribute to this emotion.

While focusing on professionals, Shafique and Mahmoud (2013) offer insights regarding the information seeking behaviour expected of academics. In the study, the authors highlight the effect of situational, personal, contextual, and informational factors in the professionals' behaviour. Professionals often engage in an extensive search for information from impersonal external sources. Additionally, the availability of information from online sources facilitates their extensive search. Conversely, Du Preez (2008) highlights the heavy reliance on internal sources of information among professionals such as engineers.
2.2 Theories of Emotions

Despite the historical focus on the investigation of the nature of emotions, there lacks uniformity and consensus on what emotions represent. Kleinginna et al. (2005) reviewed different studies and came up with 90 different definitions. However, most researchers remain confined to the definition of emotions as feelings that involve negative or positive affective valence (Lopatovska and Arapakis 2010). There are two classes of theories emotions. The first class of theories involves cognition as a requisite component of emotions. The theories try to explicate the subjective exhibitions of emotional experiences. According to the theories, cognitive activity can be intentional, or unintentional, conscious or unconscious. Cognitive activity takes the form of thoughts or judgment referred to as the cognitive appraisal. Lazarus (1984) emphasized the essentiality of cognitive evaluations in the establishment of meaning of stimuli. In defining emotions, Fridja (1994) highlights the importance of awareness of the emotional object, appraisal of the object, action readiness, and unconscious arousal. Scherer (2005) describes the componential theory of emotions as one of the cognitive theories. The theory considers emotions as the synchronization of different perpetual, bodily, and cognitive processes.

The second class of theories focuses on somatic factors and defines emotional expressions and emotional perceptions (Lopatovska and Arapakis 2010). The theories argue that bodily responses rather than cognitive judgment lead to emotional responses. The theories are based on the body system and its reaction to stimuli. According to proponents such as Tomkins (1984), the affect system acts as a primary motivation that amplifies other bodily and physical functions. Ekaman (1984) suggests that emotions involve psychosomatic states that have gone through evolution because of their adaptive value in coping with prototypical life roles. Consequently, the viewpoint suggests that emotions mobilise an organism to respond to prototypical events swiftly. The two categories of theories have found extensive explicit and implicit application in research on affective aspects of information.

Emotion research theories use two structures of emotions: continuous and discrete approaches. The discrete emotion theorists suggest about six emotions (surprise, disgust, fear, anger, sadness, and happiness), which are universally recognized and
displayed (Darwin 2005; Ekman 1992). Other emotions are a combination of the basic emotions. For example, Lopatovska and Arapakis (2010) highlight loneliness, guilt, and grief as some of the variants of sadness. In the context of information seeking, the theories imply that emotional experience is measured, and accurate translations of the expressions made (Lopatovska and Arapakis 2010).

The continuous approach to emotions posits the existence of more than one dimension in the description and distinction of emotions (Barret and Russel 1999; Lopatovska and Arapakis 2010). The theories draw their support from psychological correlates such as skin conductance and heart rate. Wundt (cited by Lopatovska and Arapakis 2010) developed the first dimensional model applying experimental and introspective methods. Other researchers have supported the finding that people perceive meaning in terms of positive or negative valence and active or passive activation (Scherer 2005). However, Barnett and Russel (cited by Lopatovska and Arapakis 2010) proposed independent bipolar dimensions such as arousal, pleasure-displeasure, and dominance-submissiveness. According to the proposition, emotions varies quantitatively but can be mapped into a bipolar dimensional space.

The works of Hanjalic and Xu (2005), Chen et al. (2005), and Soleymani et al. (2008) have used the continuous approach. Hanjalic and Xu (2005) suggested a model for the presentation of video content. The model used a two-dimensional space of valence and arousal in mapping affective video content. Chan et al. (2005) proposed an approach to the annotation of emotional dimensions from multimedia content based on low-level feature inquiry. The researchers analysed the affective features of the audio content in terms of valence and arousal to draw an affective curve. Soleymani et al. (2008) modelled an approach to affective ranking of content from movies to understand the emotions that viewers experienced and analysed the affective characterization of the movie content.

Arapakis et al. (2009), Arapakis et al. (2008), Smeaton and Rothwell (2009), Lopatovska and Cool (2008) and Ren (2009) have used the discrete approach in their studies. Arapakis et al. (2008) analysed the effect of the complexity of search tasks on users’ emotions. Using a questionnaire and affective data, the researchers derived a way of measuring facial expressions of users as they search for information. Lopatovska and Cool (2009) investigated facial expressions of users during digital
library searchers using the discrete approach. Arapakis et al. (2009) studied facial expressions using an automatic analysis method to determine the relevance of video content and the affective responses of the users. All these studies analysed users’ facial expressions based on the seven basic emotions. Essentially, the theories of emotions have led to the reliance on a number of emotional research strategies such as self-reports and observer reports among other strategies.

The models assume that information search is an individual task. Additionally, the models separate the search process from the activities that a user may engage in during the search process. The literature review has drawn comparisons of various models with the aim of explicating the most appropriate model for the current study. Nonetheless, the ISP model informs the literature review as the main point of comparison. Additionally, the models will inform the interviews and thematic analysis. The study considers all the models as of paramount importance. However, emphasis is laid on the ISP models, Leckie’s model, Vakkari’s task-based model, Choo’s model, and Cheuk Wai-Yi model. Essentially, the models relate to the study context because they incorporate emotions in explicating information seeking behaviour. Further, the chapter has reviewed the role of emotions in information behaviour. While highlighting different emotions that affect information search, the section has singled out uncertainty as the most common element that elicits emotions during the search process.

3. Methodology

The selection of the research strategy depends on the controllability of variables, the contemporariness of the topic, and the study questions (Baxter and Jack, 2008). This study relies on a case study strategy because it aims at understanding the reaction of academics and students in the information seeking behaviour. Case studies help researchers in acquiring in-depth information about an issue or event (Saunders et al. 2011). A case study involves an experiential evaluation of a contemporary phenomenon within its natural context (Noor, 2008). The strategy helps in acquiring information related to “how” and “what” questions. The current study assesses “how” Master’s students react to information search, which makes the case study strategy suitable. Case studies can be single/multiple and embedded/holistic (Saunders et al. 2011). While a single case study investigates one case, a multiple case study
investigates several related cases. Conversely, a holistic case study focuses on a case using one unit of analysis while an embedded case study uses several units of analysis (Baxter and Jack, 2008). The current study relies on a single holistic case study in which students of Manchester Metropolitan University are the case and their emotional response to search. A case study strategy facilitates the combination of several methods of collecting information in a process called data triangulation (Saunders et al. 2011). Denscombe (2010) maintains that the use of more than one research method suits the case study approach. Therefore, the case study approach will rely on interviews, as it will be discussed later. The study will examine emotions within the educational context. According to Wilson (2000), past research has identified the emotions linked to the stages of information seeking within the educational context.

The current study seeks an in-depth understanding of the emotions associated with information seeking behaviour of university students. Essentially, this does not intend to identify relationships between variables. Rather, it seeks to understand the emotional responsible to the search for information. Consequently, the study follows a descriptor-explanatory design that involves the description of the phenomenon through a review of literature and explanations of such occurrence through primary data collected via interviews with participants.

In some cases, the case study strategy and qualitative approach are use synonymously. A qualitative approach suits the case study strategy because it facilitates the acquisition of in-depth information that helps in understanding the views of the participants (Maxwell, 2012). Therefore, the study used a qualitative approach to facilitate the acquisition of such in-depth information.

The researcher conducted face-to-face interviews for individual. Denscombe (2010) observed, “When the researcher needs to gain insights into things such as people’s opinions, feelings, emotions, and experience, the interviews will almost certainly provide a more suitable method.” Pickard (2007) maintained that, “interviews are usually used when we are seeking qualitative, descriptive, in-depth data that is specific to individual…..”

A sample of 13 students from the university was acquired through convinience sampling. According to Castillo (2009), convenience sampling involves the selection of people who are easy to reach.
3.2 Researcher's Experiences

The first challenge was conducting a pilot interview, as some of the would-be respondents considered it a waste of time. Some of the selected respondents for the pilot interviews failed to keep their appointments for the interviews despite the arrangements made. Consequently, this required a second round of appointments, and because of this challenge, the number of participants initially design for the pilot interview was five but the researcher ended up with only two pilot interviews, which is not good for a novice. There are several other reasons why pilot interview is very important, given from my personal experiences; after conducting pilot interviews, the researcher adjust the time from 25-35min per participants. My first pilot interview took 50min. The questions were also tweak a little for consistent flow of the questions, after the pilot interview.

Another challenge experienced was the collection of primary data through interviews was time constraints. Essentially, the questions included in the interview guide were quite long and required considerable amount of information. Additionally, some of the respondents required clarification regarding the responses they were supposed to make despite their ISP knowledge. The researcher struggled between clarification of questions, assimilation of key details as participants recount their experiences, and timing. The researcher strongly suggest that, researchers who are new in conducting interviews should conduct several pilot interviews to gather insight and experience before embarking on the actual research. Conducting interviews can be tricky even for an old researcher if he fails to carry out a pilot interview to have a practical experience for a particular research. Further, the acquisition of the sample from different departments was problematic because some of the respondents’ wanted the interview at their private residence. Therefore, the researcher had to locate where they live, before their data were collected.

4.1 Stage 1- Emotion of Confusion

A lesser number identified independent reading as the starting point for the clarification of their task topic. One respondent (P5) highlighted the search for literature gaps as the sole starting point for the start of a search process.
“You often find a way into a fascinating argument through the identification of contradictions in literature…that’s a superior way of deciding that you got something going.” Even when you are frustrated at the beginning, you give it a try.

P5 demonstrate emotion of confusion at the early stage

While describing himself as a comparative thinker and researcher, P7 indicated that “I try to shape ideas…taking information…placing it in a new context and creating a new and original idea.”

At the proposal stage, most of the respondents (8) indicated that they stopped after acquiring adequate information showing a gap in the literature. P1 stated,

“At the proposal stage, all you have to do is identify the context of your study…further search is warranted by the approval of the proposal.”

However, P12 indicated that he would stop searching when no meaningful acquired information is in place.

“I find it futile to continue with the search process when I don’t get the information I require after a long search.”

While highlighting the variety and range of sources of information at the proposal stage, the respondents emphasized in the use of videos on YouTube. The respondent highlighted secondary sources as an essential tool for the validation of hypotheses and theories. The secondary sources highlighted included special collections and archives. P3 explained,

“...my research involved what was highlighted in terms of YouTube videos. I listened to videos, which helped in understanding the context.”

Additionally, respondents identified videos, journals, original manuscripts, and books as the secondary sources of information during the proposal stage. However, the selection of the sources to include related more to the relevance of the information contained rather than to the currency of information. However, several (5) respondents indicated that they compared the old sources to newer sources to identify the similarities, dissimilarities, or modifications. P2 indicated,

“At the initial stage, I consider the most relevant information.”
P9 stated,

“Although I consider the relevance of information, I have to compare the information to avoid providing flawed or obsolete information.”

Several (4) participants recounted their recurrent problem in tracking particular sources. The commonest complaint among the respondent was the inadequacy of secondary sources from electronic platforms. Other respondents reported the lack of confidence in using electronic platforms in the search for secondary sources, because of the generation gap. The drawback identified with the online searches was the credibility, relevance, and time used in the search for the information.

“It’s a bit complicated when searching from the Internet. If you use general terms you get tons of articles. You require a strategy of narrowing down to the area of interest.”

(P5)

However, all the respondents felt uncertain about the information they acquired for the proposal stage. P10 noted,

“The information acquired was relevant and adequate for the proposal. However, I had doubts about the information and would seek in-depth understanding of my topic, but this would come after the approval of the proposal.”

The comments above indicate that this group expresses not much of emotions; however, they tend to be uncertain at this stage because of lack of knowledge. Consequently, their Information seeking behaviour begin to manifest even at the early stage of their research proposal. This also indicate information seeking behaviour was dominant than emotions at this stage.

4.2 Stage Two: Emotion of Uncertainty

The second question prompted the respondents to recount their experience while starting the search for their dissertation. The respondents indicated unanimously that they had to restructure their proposals to fit their supervisors’ requirements. P6 stated,

“The supervisor approved my proposal but I had to change several aspects of the proposal to fit some requirements.”

Further, P4 observed,
“After a discussion with my supervisor, I had to restructure my research problem to highlight the gap in literature appropriately.”

The search terms used at the start of the search for the proposal differed from one respondent to another. Nearly three-quarters of the respondents (11) used open-ended searches while searching library catalogue and the Internet. The respondents described the Internet as an appropriate place for the acquisition of ideas. The following responses represent some of the views regarding the use of search terms in seeking information from the Internet.

“It [Internet] helps in knowing what information is on the Web, what keywords I should use, or what controversies exist about a topic.” (P4)

“I usually use different terms on Google to see where they lead me, I may then take the lead and go to specialized databases to access the actual articles.” (P8)

“When I search from the Internet, I identify the keywords that may lead to articles or magazines from where I can sift further. I just look for keywords about particular areas and sort the leads.” (P12)

After the initial search, all (13) of the respondents discussed the topic with their supervisors. Meetings with supervisors were stated as a crucial step in the start of the dissertation since the supervisors offered recommendations, answered questions, and provided resources that the students would need. The supervisors helped in building the foundation for the subsequent work. Some of the responses highlighted include the following.

“…supervisors offer guidance on what I should look for, the perspectives I should consider, and the resources that I should acquire.” (P1)

“[He] offered articles I could reference, recommended the areas I should incorporate in my search and so forth.” (P3)

The respondents indicated unanimously that they felt anxious but optimistic while selecting the topic and before discussing the topic with the supervisor.

“It was kind of nervy entering into a search without an idea of what I was really looking for, but I remained sure that I would get what I required.” (P8)

“I felt optimistic. I didn’t know what the supervisor would think about the topic.” (P1)
However, the discussion with the supervisors and the insights offered increased their optimism and all of the respondents stated contentment with their selection. While the information acquired was general in nature, the respondents indicated that they felt certain about their search process.

“Definitely, the supervisors’ recommendations increased my optimism with the topic.” (P11)

“I was optimistic after the professor approved my topic albeit the changes I had to make on my proposal. It marked the start of another interesting journey in my studies.” (P5)

The third question prompted the interviewees about their search strategy. Most of the respondents described their information retrieval strategy as an idiosyncratic process that involved incessant “digging”, browsing, searching, and following leads. Twelve of the respondents indicated citation chasing (chaining) or books-leading-to-books as their frequent search strategy. According to P4, citation chasing acted as an informal search engine for students. Another P8 stated,

“Citation chasing helped in dealing with information overload and establishing a clear focus of the research, because I could not read all the information available about the topic.”

Stressing the point, P12 stated,

“The more a source is referenced or footnoted, the more important or influential it is. It does not automatically mean that the resource is valid or superior, but it is worth your time.”

“…the process of iterating through an article, looking at the references in it, and getting that set of papers is quick with electronic copies and increases the clarity of the information required.” (P13)

“I engaged in raw searchers but it’s guided by bibliographic references found in articles and books.” (P1)

“The references provided by the supervisors reduced the uncertainty regarding the information that I was required to gather.” (P9)

Some participants also highlighted their scholarly experience in citation chasing. P7 explained,
At the undergraduate level, I would check indices and come up with a list of what I wanted to read…and that would be it. Currently, I start with broad skimming, identify the hooking articles, go to their works cited, and search the cited articles too…my level of certainty and confidence had risen with experience.”

A few participants indicated browsing through shelves as the start of their search process. P15 stated,

“…you are uncertain about what you want and you won’t find it until you browse through the stacks.”

Further, P11 stated that titles may be misleading, which required reading the books and articles.

“Sometimes the titles of the articles and books are misleading and cause confusion. Therefore, I need to leaf through pages. It’s about the chapter or sub-chapter of the book.”

Emphasizing on this point, P12 stated,

“There is no guidance on what to read. You need to acquire a number of titles that make sense and skim through the articles or books to decide about their relevance.”

P4 indicated the need of being instinctual in the search process.

“You should be a kind of a bloodhound…you sniff a good idea…you go for it. But this takes time.”

Other than searching from books and articles, the participants indicated that they sought information from conferences, databases, bibliographies, and interpersonal contacts. The university library served as a crucial source of videotapes, DVDs, and interlibrary loan services. However, the responses indicated a diminishing reliance on physical library services and an increased use of online sources of information.

The initial search for most of the respondents did not yield much of the required information. The use of open-ended searches and citation chaining helped in creating a foundation for an advanced search. For most (12) of the respondents, narrowing the search using keywords acquired online was the way of redefining the search.
“You do not require sifting through all the materials acquired at the start of the search.” (P6)

Therefore, the respondents indicated cross-referencing as a strategy of redefining the search process.

“…the discussion of papers and materials with peers helped in cross-referencing. I found several peers suggesting ‘You haven’t looked at this or that.’” (P3)

“I had to revert from the reliance on books in library shelves and combined the search with Internet sources to identify the reliable sources.” (P7)

At the start of the search stage, most respondents indicated that they had general thoughts about their sources but remained optimistic.

“I did not know what information to trust, so I maintained general thoughts. I was optimistic about the papers I skimmed through and hoped they would shape the direction of my search process.” (P11)

“I was confident and optimistic that the search would lead me somewhere, although the search was exasperating.” (P8)

After an in-depth search for appropriate sources, most respondents (10) felt contented with their work and remained optimistic that they would gain deeper insights into their topics.

“I felt ok that the materials acquired would offer insightful information about my topic.” (P12)

“The redefinition of the search and the acquisition of articles built optimism for the next stage in my task.” (P2)

The fourth question prompted the respondents about their decisions on the sources they used. The respondents showed consensus regarding the use of print and electronic journals, online journals, and periodicals acquired from the university library. A key finding was that the students relied on the physical library in accessing printed books and old reports, papers, and articles. The responses included the following.

“I found that some crucial work dating back to the seventies and eighties were unavailable online. I had to access the print journals available at the library.” (P13)
“Most of the articles in the Internet are current dating back five to fifteen years. I had to get hard copies from the library.” (P11)

‘Reading books is hard from the Internet. I preferred borrowing the books from the library to skim through without a hurry.” (P1)

The respondents indicated unanimously that the search for information at the start was challenging. The respondents had doubts about the information they acquired, which led to frustration and confusion. Although the search was becoming more specific, most respondents indicated that they had mixed thoughts.

“At the start, I did not have tangible ideas of the required information. The search process was becoming more specific, but I still had doubts about the information I acquired.” (P4)

“The search process was challenging because it required me to read and understand the sources before selecting them. I was confused and frustrated at this time.” (P1)

“The search was frustrating at the start because much of what I found was in the form of ongoing research.” (P9)

The relevance and currency of the information contained in the sources were the main determinants of trustworthiness of the sources. Most (10) respondents determined the relevance of a source depending on the other authors who had cited it. The same factors determined the perceptions towards the appropriateness of the sources. The responses acquired included the following.

“An often-cited paper portrayed its trustworthiness as a source.” (P8)

“I believe the sources were the best because they contained current and relevant theories and concepts related to my topic.” (P13)

However, most (12) of the interviewees stated that they did not read the full sources before selecting them. Constraints such as time and convenience of the resource led to a quick skimming of the papers. Consequently, most students read the abstract and conclusion of the articles or focused on specific chapters within a book before selecting the source.
“The dissertation required over a hundred sources. I could not read the sources one by one…the abstract provided a quick way of determining whether the article would be useful.” (P5)

“Reading through an entire volume would be a waste of too much time considering that I wanted information from only one chapter.” (P3)

“Focusing on the conclusion of a study helped in determining the relevance of the information the source had.” (P6)

At this stage, most respondents indicated that they felt more specific about their search process despite harbouring mixed thoughts on the information acquired.

“I felt that the search process was becoming more specific despite the confusion and frustration at the start.” (P9)

“My perception about the appropriateness of the sources gave me specific ideas that shaped the direction in the subsequent stages.” (P12)

“The focused information opened a pathway for the continual of the research.” (P11)

The fifth question prompted the informants to highlight whether the search for information was stressful or not. On this note, the respondents indicated that they had a search strategy that reduced the stress associated with the search process. According to one respondent, the uncertainty during the start of the search process meant that he had to devise a way of focusing on topic-related information. The anxiety and uncertainty of the information acquired during the initial search made the search process confusing to most of the respondents.

“I enjoyed the anxiety that the inadequacy of knowledge on my research topic created despite the confusing ideas I had at this time. It motivated me to dig deep.” (P1)

“I had this feeling that the research process would be fruitful. I enjoyed getting new insights every time I read new information.” (P4)

“The search for new information was interesting after grasp the specific concepts of what I was looking for.” (P13)

Interestingly, most of the respondents used an iterative search for information, which did not involve a rigid search from the start to the end. Some of the responses acquired included.
“I maintained flexibility. The accumulation of sources meant that at some point I would lose focus. This meant that I had to refocus my search process and start over again.” (P2)

“Although I had focused on a specific area, I found that the process of searching for information required moving backwards and forwards…from uncertainty to confidence and back again and again.” (P6)

Unanimously, the respondents stated their frustration during the initial search for information. Additionally, the respondents alluded to mixed thoughts, doubts and confusion when they felt that “they were not there” yet. The frustration was associated with the mixed thoughts during the in-depth exploration of the research topic.

“I was frustrated with the amount of information I was getting. It was more than I needed, and was not specific yet.” (P3)

“Frustration came in when I found that I required information specific to certain areas that my supervisor required me to incorporate in my work.” (P7)

“I doubted whether I would get relevant information.” (P5)

4.3 Stage 3: Emotion of Certainty
The last question prompted the respondents to explain whether they undertook further search after the conduction of empirical research just before the submission of the work. Most of the respondents indicated that they conducted limited search for additional information. However, the respondents concurred that they had to search through their sources for updates. P5 stated,

“I had to review the literature gathered. I had to make updates about the theories I had gathered to make an appropriate alignment between the theories and the empirical results acquired to maintain clarity of the information.”

P9 indicated,

“There was a need to update the literature, but no additional information was necessary… I only updated the theories based on current information since the information acquired was clearer.” I was now certain on what to do next.

The conduction of further literature focused on updating the theories and concepts associated with the topic of their discussion. According to most of the respondents,
the search before the submission of the paper ensured that the empirical research related to the literature review conducted. P8 stated,

“I had to go back to the search of the literature and update it to ensure a clear connection between the empirical results and the literature,”

P10 stated,

“The process involved reviewing the correctness of the information collected earlier and ensuring that it made a connection with my results.”

“The period involved gathering and updating the information according to its relevance.” (P7)

At the end of this stage, the respondents stated an increment in confidence and sense of direction. The confidence related the acquisition of focused information about the topic through a review of the literature and empirical research. Some of the responses include the following.

“After reviewing and updating the information in relation to the empirical data, I had increased confidence and sense of direction in my topic.” (P1)

“The update increased my interest in the study.” (P10)

“The information acquired gave clarity to the topic.” (P2)

Essentially, almost all (11) respondents associated the increased confidence to the focus they acquired from the updating of the literature.

4.4 Stage 4: Emotion of Success

The eighth question prompted the respondents to reflect on their entire task process. Most respondents associated the end of the task with satisfaction, confidence, and certainty. The presentation of the information gathered led to clarity and highly focused information that related to the topic of interest. The end of the task was associated with an increase in confidence among the respondents. P4 stated,

“After the end of the project, I was certain that the information acquired was all that I needed to make valid claims regarding my topic of interest.”

P5 indicated,

“I was satisfied and confident that I had the right information.”
“The end of the task increased confidence in my area of study specialization and, especially, the topic I was researching.”

Nonetheless, three respondents indicated that they still felt dissatisfied with the information.

“I still did not feel satisfied at the end of the task. I had to restart the process.” (P4)

“I felt that my informational needs had not been satisfied, I had to seek further information to complete the task.” (P10)

“I had to make significant updates to the information to ensure the final product satisfied my informational needs.” (P7)

However, most of the respondents did not regard themselves as expert searchers but considered that the experience gained made them better. P2 stated,

“Earlier, I would not initiate a focused research. I would fumble through the sources, but during my task, I realized the search process was focused and easy to conduct.”

P8 stated,

“I would not consider myself a search expert. However, I consider myself better in the search for information as compared to my undergraduate years.”

The respondents indicated that they felt different and “wiser” about their capability in searching for information from different sources.

“As a student, the search for information for my work gave me deeper understanding of the process I should follow. I understand that the search for information is not as easy as it looks.”

This stage was design for those who also failed to show emotions as the recount their search experiences. The aim of this stage was to discuss their feelings from the beginning to the end of the task. it captures the feelings at each stage and the summative feelings of the entire process.
5.1 Findings and Discussion

The findings confirm that many students follow Kuhlthau’s model in which at the planning stage the search lacks a clear focus. At this stage, the students develop a search strategy and engage in general browsing and foraging for general ideas or background information concerning their field of research. The initial stages involve contact with supervisors and peers from where they acquire some form of guidance regarding the search direction. Additionally, at this stage the students refer to their coursework and different literature from where they can identify the literature gap. The information and the research at the undergraduate level also guide the initial stages of information seeking. The organised information seeking behaviour of the students includes regular planning as guided by the supervisors.

The findings confirm earlier observations regarding the emotional response to the search process during the initial stages. As indicated by several respondents, the initial stages of searching are complicated because of the uncertainty about the topic and the vagueness of thoughts. At this stage, the respondents confirm their need for information, which occurs through the identification of the research gap and the search for background information. Apprehension at this stage emanates from the confusion regarding the lack of focus on the search of information.

Fundamentally, the participants confirm the reliance on secondary sources of information at the proposal stage. The results show that the participants rely on secondary sources of information while others search for information from external sources. However, the respondents also indicate a trend in which some of them rely on personal collections as a feature of their information seeking behaviour. Although some of the participants indicated that they had prior knowledge regarding their research topics, it was evident that most of the respondents begun with insubstantial experience in their search area. It is also worth observing that the reliance on secondary sources also involved the comparison of old and new resources to identify their similarities, dissimilarities, and modifications. Similar to previous studies, the first stage in the search process involved some level of anxiety. As indicated by several respondents, the doubts and uncertainty portrayed during the initial stage led to anxiety about the direction to which the search would take.
The information seeking behaviour of the respondents changed during the second stage of searching for the task. Consequently, it involves extensive restructuring of underdeveloped concepts gathered during the task. The respondents confirmed the observation by indicating that they had to restructure their proposals to meet the requirements of their supervisors. However, the search for information had not taken a focused approach yet. As observed, the search process involved open-ended searches from the Internet and library catalogue. Unanimously, the respondents considered the Internet as one of the most appropriate sources of information.

Arguably, the responses indicate a feature found in previous studies regarding the search for information at the initial stages of searching. The responses show an idiosyncratic search process involving digging, browsing, searching, and following leads (citation chaining). The responses indicate the haphazard methods used in the search for information at the start of the process. However, despite the uncertainty at the start of the task, the responses indicate a high level of optimism with their work. Nonetheless, the search for information during the task process is an iterative process, which becomes refined and focused with time. The scholarly experience in citation chaining indicates a trend or behaviour in the search for information among the respondents. Citation chaining facilitates focusing of the search process to specified areas of interest. Fundamentally, the search process at this stage is general in which the respondents rely on a plethora of resources including videotapes, DVDs, and interlibrary loan services. Nonetheless, the emergence and popularity of the Internet has led to a diminishing reliance on physical libraries.

Apparently, despite the optimism expressed during the selection of the sources, the responses confirm the presence of confusion, frustration, and doubts during the exploration of the potential sources. Essentially, the initial stages of information seeking involve gaps that require bridges to fill. However, the selection of the appropriate bridges led to doubts because of mixed thoughts and lack of specific focus in the search of information. However, the search for information and the consequent use of that information related to the needs portrayed by the gaps. Consequently, the respondents entered into deeper search to satisfy the needs.

The search process takes direction as the user develops a focus for the study. According to the responses, the formulation of a focused perspective diminishes the
uncertainty portrayed at the initial stages. Consequently, the users have increased confidence because of the clarity of the information they require. At this stage, there was an increase in the search for information from supervisors, tutors, and peers. Essentially, the responses indicate that the reliance on the “people phase” was crucial in shaping confidence and the direction of the search. While the respondents relied on databases and libraries for the search of information, they required continued support and cross-reference with their peers to shape their task. Essentially this can be regarded as the most crucial stage because it will determine the confidence an individual gain with the search process. Increased interest, confidence, and sense of direction with the information seeking determine the level of satisfaction or dissatisfaction. After completing the search, respondents indicated satisfaction with their search process. The presentation of information depends on the level of satisfaction or dissatisfaction with the initial search. The search could begin again in case the user feels dissatisfied with the information. However, the responses indicate that the review of the collected information was the only crucial step that most respondents undertook after the collection of empirical information. However, some of the responses indicate the need for an iterative procedure in the collection of information to avoid a complete repeat of the collection process. Fundamentally, the satisfied respondents indicate that developing a search strategy increase the confidence in information seeking as the search continues. Fundamentally, the adoption of a flexible but organised search strategy increases the ease in the search for information.
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