Understanding Information Seeking Behavior of Indonesian Postgraduate Students in Malaysian Universities: An Empirical Study

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Abstract : T*his study investigates Indonesian postgraduate student's experience at the pre-sessional program of the process of seeking information and the strategies they used throughout the process. The objective is to understand their information seeking behavior particularly academic-related information in order to improve the effectiveness of educational communication in Malaysia higher institutions. Two research questions are addressed: what experiences do pre-sessional students face in the process of information seeking that can be articulated and described? What stages do pre-sessional students experience in the process of information seeking construction? Using the qualitative method, the study found that the pre-sessional students have different patterns in the constructive process of*

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information seeking in two different groups i.e. writing and reading classes.
Six stages and four stages of the search process were identified respectively
for the two groups.

Keywords*: Information-seeking, educational communication,*
constructive process, higher education, postgraduate, Indonesia,
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It is a common occurrence that postgraduate students need a lot of information during their studies such as for completing their classwork-related assignments or merely for fulfilling their personal information needs. Their perceptions about the knowledge and how they construct it will affect their information-seeking behavior.

The pre-sessional is a pre-requisite program for newcomers (first year) students or second year students who fail to prove their English proficiency as required by the university. The students are likely had to study English extensively. They need to improve their communicative proficiency for the purposes not only for participating effectively in classes, tutorials and seminars, but also for survival within the system, academically and socially.

Study about pre-sessional students will be an interesting and important learning. In brief, the followings are the reasons why this user group of students is chosen: (1) pre-sessional students are one of the most frequently users of information who have uniqueness of information behaviors in terms of information-seeking and information uses; (2) pre-sessional is an preliminary stage where students prepare themselves to improve study skills, to increase fluency in English and to familiarize themselves with the University environment as well as to campus life in general. They have a mix of enormous personal and academic-related information needs that describe also a uniqueness of their information behaviors compared to other types of students.

BACKGROUND

It is not an extraordinary phenomenon that students are given assignments by their teachers or lecturers to write a project paper or other types of works during their study. According to Kuhlthau (1993), the process of seeking information in completing the assignment varies among the students. She developed a model of the search process through a longitudinal study of students' experience in seeking information to fulfill their information needs to complete the assignments. Six stages in the search process were identified by Kuhlthau from the students' description of their experience; and these stages according to her match the phases in the process of construction.

The Information Search Process Model (Kuhlthau, 1993) shows six stages of the students' experience. The first stage is task initiation. When the students receive the assignment, they will express feelings of uncertainty and apprehension. They need to prepare for the decision of selecting a topic by understanding the assignment and relating it to prior experience. The second stage is topic selection. The uncertainty will continue until a topic is selected. If a topic is not chosen quickly, apprehension will increase. The third stage is pre-focus exploration. In this stage, students explore information on the general topic in order to gain a focus. The fourth stage is focus formulation. A clear focus is needed at this stage in the search process to enable students to progress to the next stage. The fifth stage is information collection. In this stage, students will feel a sense of direction and feelings of confidence because they start collecting information with the focus. The sixth or the last stage is search closure. At this stage, students end up the conclusion of the search process and the starting phase of the writing process.

This model will be more interesting if many types of students are taking into account such as pre-sessional students that have very unique behavior of information seeking as aforementioned. Standing on this motive, this study tries to understand the pre-sessional student's experience in the process of seeking information. Hence, a model of information search process of pre-sessional students will be developed from this study.

OBJECTIVES OF THE STUDY

This study deals with understanding students' insights into information-seeking and communication behavior of pre-sessional students in the process of seeking information. Two research questions are addressed in order to understand their experience:

1. What experiences do pre-sessional students face in the process of information seeking that can be articulated and described?

2. What stages do pre-sessional students experience in the process of construction?

The objective is to investigate and understand the search process of pre-sessional students in fulfilling their academic-related information needs, and to observe the strategies they used to work through the process.

SIGNIFICANCE

Understanding student behavior is the sine qua non of a successful education system. For a university who practices international education, understanding international students' behavior, especially information seeking behavior, at preliminary stage is crucial for future international campaigns and educational improvements. It is not only for a university library to understand information seeking behavior of students, but also for university lecturers who have frequently interactive with the students. By knowing and studying their experiences and the stages in the constructive process of seeking information, we will be able to understand their approaches and strategies in meeting their academic-related information need, so that we can eliminate the symptoms which are always faced by students and lecturers and recognize potentially disruptive matters to the learning process. In addition, we will be able to improve information availability and accessibility especially for the students in order to get a better acceleration in educational system improvements. This study result is also intended to compare with the existing model of information search process in the literature. Moreover, the results of this study will enrich existing knowledge of information seeking behaviors and will contribute for a better higher education system.

LITERATURE REVIEW

Theoretical Contribution

In studying information behavior of users, it is important to learn the fundamental cognitive processes, actions, and affective states of information seeking in order to obtain a holistic view about the user's behavior (Dervin, 1983; Ingwersen, 1982, 1996; Nahl, 1997). According to Xie (2000), information users use their general cognitive skills and their knowledge to represent their problems or tasks, to establish a set of sub goals to fulfill the overall goals, and to develop techniques and strategies to seek the required information.

During information seeking, the user's personal information infrastructures are also developed as knowledge or information is gained. Some of these information-seeking strategies include searching, tracking, selecting, comparing, acquiring, consulting, and exploring. Ellis (1989b) used a behavioral approach, provided other strategies, such as starting, chaining, browsing, differentiating, monitoring, and extraction of information. That is, when faced with an information problem, individuals cognitively first search their memory about past experience and previous learning from their environment (Murray, 1991), or it is like what said that it is a cognitive experience that represents gaps in the current knowledge of information users (Devadason, et al., 1997). When the information seeker cannot solve their problem using memory, however, the search for information is extended beyond the individual memory domain and goes into the immediate environment as information seeking behavior.

In the process of information seeking and need resolution, certain factors may interfere positively or negatively with an information activity and may create barriers. Many scholars have discussed these issues extensively. For examples, Kuhlthau (1993) studied widely on strategies, expectations, and attitudes of information seekers. Ocholla (1999) and Wilson (1997) described these factors as personal (motivation), organizational (e.g., priorities), and situational factors (e.g., lack of time; Murray, 1991). Other factors would include information availability (Kuhlthau, 1991) uses to which this information is put, gratification derived from use, and challenges facing the individual needing information, such as nature of packaging of information and unreliability of source (Wilson,

1997). Another important factor is uncertainty within the information seeker, which could be caused by limited capacity to absorb information, low education level (Palmer, 1991), emotional characteristics and bad past experience leading to resistance (Wilson, 1997), and age (Nginwa, et al., 1997), lead to limited information-seeking strategies. Other barriers that have a bearing on information seeking include the cost of accessing information, the time needed to search and retrieve information (Murray, 1991), information literacy, and mode of packaging and presentation of information. Additional factors that have a bearing on whether information is sought include the importance of satisfying the information need, consequences of acting without full information, and availability of information sources (Odongo, et al., 2003).

Wilson (2000) perceives information seeking, searching, and use as associated with different stages of a goal-oriented problem-solving process. These stages are problem recognition, problem definition, problem resolution, and solution statement (where needed). Wilson's model does not integrate the three triads of information seeking (i.e., cognitive, physical, and affective behaviors) into this process.

Marchionini's (1995) model of the information seeking process describes eight stages that develop in parallel: problem recognition, problem understanding, choosing a search system, formulating a query, executing a search, examining results, extracting information, and reflecting/iterating/ and stopping (Marchionini,1995). It also relates to Kuhlthau's (1991) model of the information search process, except that it does not integrate cognitive, physical, and affective behaviors into these stages (Kuhlthau, 1991). Ellis (1989b), Ellis, et al. (1993) and Ellis, et al. (1997) proposed a model of the information seeking process based on studies of the information behavior of researchers in the social sciences, physical sciences, and in engineering. The model describes a set of common characteristics of information seeking activities: starting, chaining, browsing, differentiating, monitoring, extracting, verifying, and ending. Motivations in this framework relate to affective states that Kuhlthau (1991) and Nahl (1997) consider as one of the main factors influencing information-seeking activities.

Previous Studies

Zhang (1992) in his study tried to understand information seeking patterns and behaviors of selected undergraduate students in a Chinese university by employing a user-oriented approach and combines survey and experiment techniques. The study found that the information-seeking environment for these students is dynamic and complex. In general, students tend to be initially overconfident regarding the existence of information and finding the information, and this overconfidence sometimes manifests itself as overestimation of their familiarity with the subject field or of the *definedness* of the information need. Whitmire (2003) studied about epistemological beliefs and the information-seeking behavior of undergraduates. This study explored the relationship between undergraduates' epistemological beliefs and their information-seeking behavior. Twenty undergraduates attending an Ivy League university were interviewed about their search process as they completed a major research paper during their senior year. Results of this study said that epistemological beliefs affected topic, the use of mediators, search techniques, the evaluation of information, and the ability to recognize authority. Epistemological beliefs also affected several stages of the Information Search Process (ISP) model: topic selection, pre-focus formulation, focus formulation, and collection.

Kyung-Sun Kim (2001) investigated forty-eight undergraduate students on how they seek information on the Web. The participants were divided into four groups according to cognitive style and online database search experience. It was found that online search experience and cognitive style interacted and influenced search performance, as well as navigational style. Online search experience also interacted with task type to influence navigational style and the number of nodes visited. Given (2002) in her study investigated the information-seeking behaviors of mature undergraduates. Her study used in-depth qualitative interviews to explore the information seeking behavior of 25 mature undergraduates at one Canadian university. It explored the complex interweaving of these students' everyday and academic information needs in light of Savolainen's framework for the study of everyday life information–seeking.

Fescemyer (2000) also studied about information-seeking behavior of undergraduate geography students. In this study, student papers were analyzed by citation analysis to determine what types of resources students used to gather information to create the answers. The study reported that students used a wide variety of sources in print and electronic formats to gather information for the test. A study of the information seeking behavior of students in an Eleventh grade honors math class, reported by Latrobe and Havener (1997). The researchers considered that by looking at the full range of student information seeking behavior in both academic and personal contexts, librarians can more successfully design services and programs that are integrated into the wider patterns of students' lives.

Cooper, et al. (1998) in their study explored the use of mental imagery in the constructive tasks of problem solving and learning in the Information Seeking Process (ISP). Mental imagery appears to play an important role in creativity and problem solving. Discusses imagery as a cognitive strategy, looks at the role of imagery in the ISP and describes the 6 stages of the ISP of secondary students in the USA. In previous study, Kuhlthau (1988a) has developed a model of the Library Search Process in terms of cognitive and affective aspects and in another research published in the same year Kuhlthau (1988b) studied on how students' perceptions of the ISP had changed after four years of college. Thomas (1993) conducted an investigation into situational characteristics and their relationship to factors affecting student judgments of the relevance of information. The study proposed new-student orientation as an exercise in retrieval; students engage in information-seeking when they interact with the knowledge base of administrators, faculty and continuing graduate students in a Ph.D. program.

A study has been done by Sheppard (1983) of the information needs and information seeking behavior of a population of 78 student-teachers engaged in 1980 in TAFE (Technical and Further Education) teacher education programme and in teaching trade subjects to apprentices and other students in TAFE colleges in Victoria. The relative importance and use of 22 sources of information were determined from an analysis of responses to a questionnaire and through subsequent interviews with selected student-teachers and lecturing staff at the State College of Victoria at Hawthorn. Farida (1999) conducted a study to investigate and describe

the information seeking behaviour of pre-university *madrasah* students in Singapore. Preferred information seeking sources, ranking of information sources, skills in operating some of the IT-based information facilities and the relationship between parents' background and students' skills were analyzed. The major findings of the study indicated that: 1) Pre-university madrasah students prefer printed materials rather than informal sources or electronic sources; 2) Students with parents of higher education are generally more skilled included internet usage than those with parents of lower education level.

Griffiths, et al. (2002) conducted a study on student searching behaviour in the JISC information environment. The study was aimed to develop understanding of users' searching behaviour in the Information Environment by asking them to assess the quality of Distributed National Electronic Resource (DNER) services according to a range of defined criteria. The study was concerned with two questions: 1) How do students discover and locate information and, 2) How do services (and aspects of services) rate in a student evaluation and what criteria are most important to them? The results in particular raise very interesting and important issues: 1) Students prefer to locate information or resources via a search engine above all other options, and Google is the search engine of choice, and; 2) Whilst 70% of participants felt that they were successful only half of these thought that it was easy to locate information. Ren (2000) conducted a user survey at the Newark campus of Rutgers University, New Jersey, involving 85 undergraduates participating in a library training programme as part of their English composition course. The training was tailored to suit the students' needs, which required the writing of a literary criticism on a novel of a selected author. The students learned to search several, relevant online databases and were trained to construct search strategies and locate library research guides from the World Wide Web. Measures used to evaluate the success of the exercise included: self-efficacy in electronic information searching; attitudes towards acquiring electronic search skills; negative emotions; and search performance. It concludes that the students' self-efficacy in electronic information searching increased after the training and that increase was related to attitudes, emotional experiences and search performance.

A study also has been conducted by Burrows, et al. (1999) to evaluate the adequacy of the MEDLINE instruction routinely given to all entering medical students at Miami University School of Medicine and the ability of students to search effectively for and retrieve evidence based information for clinical decision making by the end of their third year. A strategy was developed and implemented for evaluating the search strategies and articles selected by third year students, who participated in the Objective Structured Clinical Examination (OSCE) in June 1996, 1997, and 1998 and reviewed the literature on evidence based medicine and evaluation of medical student searches. Concludes that evaluating medical student searches for evidence based information is an effective way of evaluating students' searching proficiency and the adequacy of the instruction they receive. Wood et al. (1996) conducted a study of the exploitation by undergraduates of CD-ROMs, BIDS (Bath Information and Data Service), and information services on the Internet. Undergraduates were tested to establish how they searched CD-ROM databases over a range of subjects areas; the effectiveness of their searches and their satisfaction with them. There were significant differences in the searching behaviour and the effectiveness of the searches carried out by students with different learning and cognitive styles.

Whitmire (2002) applied the Biglan's model of disciplinary differences to study the information seeking behaviour patterns of 5,175 undergraduates. The Biglan's model categorizes academic disciplines along three dimensions: hard-soft; pure-applied; and life-nonlife systems. Using t-tests, this model proved to be valid for distinguishing differences in undergraduates' information seeking behaviour patterns among various academic disciplines.

From the above literature reviews, we know that a lot of studies have been conducted in order to strengthen and to deepen our understanding on information seeking behavior of students. The study on information seeking behavior of students is important due to we want to give the best information service during their study. However, as far as we are concerned, there is no such a research that study on pre-sessional students specifically. As we mentioned above, pre-sessional students have a uniqueness due to they are in an intermediary stage with enormous information needs, classwork-related and personal needs, such as how to search information

relate to English proficiency, study skills improvement, and to be familiar with the University and the campus life in general. By conducting this study, we hope we can understand their information environment and their information seeking behavior, so that we can provide the best service in terms of availability and accessibility of information.

METHOD

This study used a qualitative approach to understand the pre-sessional students' experiences in fulfilling their academic-related information need. The participants in this study are Indonesian postgraduate students who are sitting at the pre-sessional level at the Centre for Language and Pre-University Academic Development (CELPAD) of International Islamic University Malaysia – Gombak Campus.

Ten Indonesian postgraduate students at the pre-sessional level studying English before admitted into the postgraduate program at the International Islamic University Malaysia were selected and interviewed. The participants were carefully selected those who were attending writing and reading class at the same time. We differentiate between these two classes in understanding their information seeking behavior.

We used interview method to understand their information seeking behavior. Several reasons of choosing interview method are: the interview offers an important technique of collecting data on users' experiences, perceptions, and choice affecting the information search process. Interview allows interviewee to explain their actions and to elaborate on perceptions that lie behind action. The students will have an opportunity to tell how the search process works as they see it. Interview provides a potential method for checking on the researcher's assumptions and findings in the sphere of personal experience. Interview provides in-depth insights into not only what was happening but also why it was.

Ten Indonesian pre-sessional students are interviewed in this study. The interviews were designed to examine the particular stage of the process that participants experienced. Each interview takes 30-45 minutes taped sessions. We take into account the consideration to include a diversity of disciplines and appropriate representation of male and female students when selected the participants.

Interview is an outstandingly effective method for investigating the students' interpretations and explanations of what had occurred during the process. Even though students are asked similar questions, they are urged to elaborate on their personal experiences. Their responses will be analyzed for both individual approaches and common experiences. The following are examples of the points to which the students were asked to give their responses during the interviews:

1. Describing some topics of past assignments or project papers.
2. Their feeling when the lecturer announced the assignments or project papers.
3. How and why the students chose a particular topic.
4. Describing the procedure that has been followed when searching for the information.
5. Describing any choices the students have made in the search that gave the students just the information they were looking for, changed their mind about the topic, led the students to new understandings, or gave directions.
6. Describing how they use the information sources at the beginning of fulfilling their information need, in the middle, and at the end of the process.
7. Do they need intermediary for searching the information? What kind of assistance they need and how could the intermediary be more helpful.
8. What is the most difficult part of the assignment and why.
9. How the students know when the search was completed.
10 The conclusion of the search and feeling about the work.

The participants are individually interviewed to trace the search processes in detail. In addition to the above points, each participant is asked to draw on a timeline basis the process of a search as they commonly experienced. The timeline will provide a conceptual map of the participants' perception of the search process based on their recall of, and reflection on, their search experience. According to Kuhlthau (1993), timelines and flowcharts can be used as methods of data collection since users mapped and diagrammed their own perceptions of the information

search process. Therefore, flowcharts and timelines as conceptual maps of the search process will be used in this study to collect data on the interviews. The interviews of each participant are then roughly analyzed under the following five categories: selection of topic, attitude towards assignments, perceptions of searching, procedures for gathering and organizing information, and the role of intermediaries.

In order to outfit with gender composition of Indonesian postgraduate students at the university, male students and female students are selected proportionally. In terms of level of study, all participants are from postgraduate master program. Most of the students participated in this study are from social sciences followed by engineering and humanities.

Majority of the respondents are those in the second year of the pre-sessional program while and the rest of the respondent are newcomers as the first year students. Whereas, the level of English proficiency of the respondents during the interview session, mainly those in the level 3000 i.e. the highest level before the students are permitted to join regular classes at the master program.

RESULTS AND DISCUSSION

The study was designed in a small-scale qualitative manner to observe pre-sessional students involved in information seeking over a period of time and to obtain their perceptions of what they are feeling, thinking, and doing or taking action towards the process. It is a common thing for the students to search information to accomplish their assignments; and these kinds of searching will be carried out in a process which is called the information search process.

Kuhlthau (1993) had proved that the process of seeking information in completing the assignment varies among the students. She developed a model based on her study which is called the model of Information Search Process that illustrates the six stages of the students' experience in completing their assignments: (1) task initiation, (2) topic selection, (3) pre-focus exploration, (4) focus formulation, (5) information collection, and (6) search closure. In relation to the model, this study was conducted through a series of interviews with the ten pre-sessional students.

Patterns in the constructive process

The study found that the students experienced two different patterns in the constructive process of information seeking. The first pattern related to the writing class and the second pattern associated with the reading class. The patterns in the constructive process of information seeking in the writing class are totally different than that of in the reading class. The following are the descriptions of the patterns experienced by the participants which are illustrated by some of their comments:

1. *Patterns in the constructive process of information seeking in writing class*

The patterns in the constructive process of information seeking in the writing class in this study showed a quite similar to the patterns in the constructive process of information seeking studied by Kuhlthau (1993). There were six stages in the search process as the following:

The first stage was task initiation. When the students first hear and received the assignment, they felt uncertainty, fear, and anxiety. They needed to decide what topic they should select because the lecturer didn't give them a specific topic. One student expressed that "When I first hear about the assignment, I just got confused because I didn't understand enough about the assignment. I went to my colleagues then to ask them about their understandings about the assignment so that I could get the same understanding among others." Another student revealed that "First I thought that it was not so difficult to do the paper because I didn't received any instruction that we had to do the paper at the beginning of the class and we still had a long time to do it, but after few weeks studying at the class, I just felt like everyone else in the class. But frankly, when I really touched the assignment to start, I experienced some difficulties due to I didn't understand English very well especially grammar. Sometimes, I wanted to express a lot of things to be written, but I had to write first in Indonesian language and then translated into English. I felt that there were a lot of sentences which are grammatically wrongs."

The students were experiencing this first stage in a short time. Most of the students described that they needed not more than two days to decide about the topic that they should select, even one student spontaneously

selected a topic after receiving the assignment as he expressed that "My lecturer allowed the students to do self-determination in choosing their own topic for the assignment. At that time, I suddenly proposed a topic and he agreed on the topic."

The second stage was topic selection. The students expressed a feeling of optimism when a topic had been selected. One student expressed that "… in my writing class, I had to write something about Malaysia. I really didn't know what I had to write about until I got the idea to write about KLCC. To have a better description about KLCC, I went there to find out what type of information I could write describing about KLCC." Other student articulated "… I choose a topic that familiar to my knowledge, then I choose a topic about Tourism in Bali that I think I have clear idea to write about."

The third stage was pre-focus exploration. In this stage, the students started to explore information in relation to the topic they had chosen in order to give them a focus. Most of the students experienced difficulties in this stage. A student expressed that "… after trying to seek information on the topic, I found some difficulties to get the information. Firstly, I searched on the Internet and I found that no relevant information directly to my topic in my searching. I really got confused at that time. After that I went to the library browsing the book collections to find information about the topic and I still found no direct relevant information." Another student revealed that "… However, I still didn't know what I should write in the paper. Again, I had to discuss about the content of the assignment with my friends who have a better English proficiency than mine. After that, I would go to the library and the Internet to seek related information about the assignment. I never went to the lecturers to consult with them about the assignment." One student declared that "… other problem that I faced was that how to organize the paper, what kind of information that I should write in the paper, and so forth. To find actual information, first I chose to come browsing the Internet because it was so easy to find information on the Internet by using search engines like "Google" and no need to come to the library to borrow books, except for some latest journal articles."

If the students didn't get a focus on desired information, apprehension and uncertainty would increase, even it become so threatening. The students would appeal a topic change as one student revealed "At this point, I had

to go to see my classmates to ask them whether they already completed the assignment or not and I found that they were experiencing the same problem, the same dilemma as what I was experiencing; as a result, none of us had started to do the assignment. What I did then was I went to see the lecturer and appealed for changing the topic with the reason that I couldn't find the information on the topic. Unfortunately, he rejected my suggestion to change the topic. I had no choice and I had to accomplish my assignment on that topic". However, the student explained that he had to be frankly to tell his problem to the lecturer, as he expressed: "…I couldn't find the information because it was not my major. I am majoring in sociology and I read a lot of books in sociology. So, if you don't mind I would like to change the topic based on what I have read..." Another student noted that "… but I still felt anxious because I didn't know a lot of terms that I had to use in."

The fourth stage was focus formulation. The students would express more confidence once they had reached this stage as a student expressed his feeling by saying "… I got a clearer concept about my assignment …" Another student revealed "… with sufficient information in hand with my topic, I know what to do then with my assignment."

The fifth stage was information collection. At this stage, the students' feeling towards the assignment as becomes no more trouble. They described a sense of direction and feelings of confidence, more and more confidence than before. A student declared that "I didn't feel anxiousness unless in terms of grammar. When I got problems, first I would refer to the previous papers done by seniors and if I still unsatisfied, I would go to see the lecturer. In addition, I had to go to the library to read the required books." Another student said that "After two or three months, I started recognizing the terms. I felt more confidence even I could recognized certain words that frequently misused in the previous writings."

The sixth stage was search closure. At this stage, students end up the conclusion of the search process and they felt that they could start of the writing process as one student expressed a feeling that "I was satisfied with the information I found from the Internet and from the journals. I felt that with this information I could start writing." Another student expressed that "… at the end, I just collected information with the focus on the Internet using the search engine or using the OPAC in the library because I already

identified keywords to retrieve the information. After feeling that all desired information was sufficient, then I started writing."

2. *Patterns in the constructive process of information seeking in reading class*

The patterns in the constructive process of information seeking in reading class showed a totally difference to the patterns in the constructive process of information seeking in writing class. The difference might be caused by a different of the sufficient amount and type of information needed in the completion of the assignment. The assignment received by the students in writing class was not merely choosing a topic, but also determining the content and constructing the sentences in the assignment. However, these tasks were not found in the reading class assignment. It was not like the patterns in the constructive process of information seeking in writing class, the patterns in the constructive process of information seeking in reading class involved only four stages of the search process as the following:

The first stage was task initiation. It was not like in writing class where the students felt uncertainty, fear, and anxiety when first time hear and received the assignment; the students in reading class felt different types of feelings. Even some of the students felt glad received the assignment as one student expressed "When I first hear about the assignment, I just felt happy because only by having assignments I would learn, open and read books" or as another student said "It was great because I would choose a reading topic on my country so that all my classmates would know about my country."

The second stage was topic selection. The students chose the topic based on their interests or their hobbies unless the lecturer gave them a specific topic. A student expressed that "Reading especially about sport is my habit. So, it was no matter for me, I had a great collection of soccer news." Other student revealed "… I chose a topic on technology invention because I interested in tech invention especially ICT or mobile communication technology. I know where to go to find information on mobile technology invention on the Internet."

The third stage was information exploration. One student expressed "My lecturer gave us a freedom to choose our own topic. So, because I was

taking reading class and I set on my mind that I had to find the information on newspapers, and then I went to the library to seek information in the newspaper section and then read a number of news articles and started selecting the articles based on actual and interesting issues. I also did Internet surfing in the library to read online newspapers." A student also mentioned "…I went to the library for browsing information about my topic particularly I went to the book shelves on tourism and took some book related to Indonesian tourism because I chose a topic on tourism."

The last stage was search closure. At this stage, students end up the search process with a confident and positive feeling and they brought several articles in hands to submit one of them to their lecturer to get the approval as their assignment. A student expressed "… After finishing collecting and reading the articles in the library as well as on the Internet, I felt confident to choose one article, summarize it up, and then submit it to the lecturer as my reading assignment." Another student revealed "… I was sure that my selected article would get approval and then I could finish my assignment very fast."

CONCLUSION

We found different patterns in the constructive process of information seeking between writing class and reading class of the students. The differences might be caused by a different amount and type of information needed in the completion of the assignment. Six stages of the search process in writing class and four stages of the search process in reading class were derived from this study. In general, the six stages of the search process in writing class matched the patterns in the constructive process of information seeking developed by Kuhlthau. Even though this study was not generated a model, but a description of the patterns in the constructive process described in this study reflects a model of the information search process.

Limitation and Implication for further research

This study has some limitations. First, the participants in this study are those who are master level and from Indonesia studying at IIUM. Second, the term information seeking behavior of pre-sessional students

in this study refers to only academic-related information. Third, this study concerns only to students on pre-sessional level and registered as full-time students at the university. Fourth, number of participant is relative small to achieve a better understanding in this subject matter. Based on these limitations and considering that understanding the information search process of students is very crucial for the betterment and effectiveness of educational process, we would like to recommend several improvements that may imply for further research to get a better result:

1. To include participants at all levels of study i.e. undergraduate, masters, and PhD. Country of origin of participants should be broadened to have background diversities that may affect the model including different countries or cultures and different university backgrounds. Number of participants also needs to be increased. A more interesting thing is to include all types of students such as part-time, distance learning, adult learning, executive class, online learning and so forth, so that the result of the study can be generalized and all parties can be benefited from the study.

2. It is suggested to study holistic information seeking behavior of students not only related to class assignments, but also to include other needs such as personal need, skill improvement need, and job-related needs and so forth.

3. To conduct a study for the whole semester. In addition, a direct observation is also needed in order to get a better understanding of the whole process.

4. To select suitable time for the interview. Based on our experience, mid of semester is the best time to conduct interviews with students.

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