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# INFORMATION SEEKING BEHAVIOUR OF TRAINEE TEACHERS IN SELECTED TEACHER TRAINING COLLEGES IN MALAYSIA

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***ABSTRACT***

*Investigates the information seeking behaviour of trainee teachers from two teacher training colleges within the state of Johor, Malaysia. A total of 197 pre-service teachers from the fifth semester have been studied. The data-collecting instrument consisted of a questionnaire. The findings revealed that a majority of the trainees' information needs are focused around their course work and there is a low awareness of information needs that are not related to teaching. More than half of the trainees moderately expressed positive feelings for seeking information. As for negative feelings, the feelings of 'desperate' was most prevalent. Trainees largely preferred informal and interpersonal sources. Renowned printed sources such as journals, encyclopaedias, and indexes recorded a low frequency of use. The trainees favoured sources in Malay language to English. Even though the student teachers rated public libraries as excellent, they frequented college library most despite rating it as the third best. Accessibility was considered as the most important external attribute of information. Currency and relevancy of information were given high priority amongst the internal attributes. Accessibility to sources and using the OPAC were cited as major problems when locating information. Investigations showed that computers were largely used for typing rather than for seeking and processing information.*

**Keywords:** Information seeking behaviour; Trainee teachers; Student teachers, Teacher training colleges; Johor; Malaysia

## INTRODUCTION

Effective teaching is essential for effective learning. The process of teaching has become more complex of late. Computers and computing methods are playing significant roles in education. The Association for Teacher Education in Europe (ATEE) reports that information technology has brought new ways of handling information, especially data carrying information. The new ways of information processing are connected with new thinking methods and new problem solving approaches. Therefore, literacy in information technology is needed for teachers (IFIP, 1976; Peter, 1984). Teachers in all disciplines need certain background knowledge and skills in information seeking to incorporate the ideas and techniques of information processing into their teaching. Teachers need to know how to retrieve, evaluate and utilise information derived from various sources. The proliferation of information and the higher expectations from employees has made education and training a life-long process and schools

to develop students as independent learners. Increasingly students should be responsible for their own learning. Students should have their own mind and teachers have to make sure, they have the necessary skills to do so. Teachers, as a result have to move away from text-based approaches of teaching to resource-based instructions as well as student-centred learning in order to develop independent learners for life. In creating this knowledge culture, the educators themselves need to internalise and practise the habits and values related to learning and acquiring knowledge. Such educators can then serve as role models having the love for learning as well as the ability and skills that are essential in acquiring information. Educators must be initiators of changes and they must ensure that the reforms permeate to the lower levels.

Since the teacher training colleges produce a large proportion of teachers in Malaysia, the problem could be addressed at its root by incorporating a systematic information seeking skills program in the pre-service teacher training curriculum. Hence, the teacher training program should emphasise formal training in the use of electronic database and other technologies in addition to standard reference sources. There is a need for good instructional materials to help trainee teachers acquire information skills and to allow them to gain the maximum benefit from these sources. The preparation of such materials need sound understanding of the way these trainees seek information (Wood, 1996). The Malaysian Diploma in Teaching curriculum introduced in 1996 happens to be in line with the National Philosophy of Education, aimed at producing a new generation of quality primary school teachers. The curriculum claims to suit the 'smart school' concept of the current teaching environment (Malaysia, Kementerian Pendidikan, 1997).

## RESEARCH OBJECTIVES

The objective of this study is to investigate the information seeking behaviour of trainee teachers of selected courses in Malaysian Teacher Training Colleges. The study intends:

a) to investigate the information needs of trainee teachers and their perceptual feelings that arise from these needs;
b) to establish the motives as to why trainee teachers seek information;
c) to explore the resources or channels chosen by trainee teachers to satisfy their information needs;
d) to examine the selected attributes of information that trainee teachers' value in their selection of information sources and content;
e) to assess the extent of potential problems trainee teachers encounter to satisfy their perceived information needs;
f) to assess trainee teachers' computer skills associated with information seeking, processing, and presenting; and
g) to examine trainee teachers' evaluation of selected information sources.

## METHOD

There are 31 Teacher Training Colleges currently operating all over the country. This study is confined to teacher training colleges situated in the state of Johor

only. There are two teacher training colleges in Johor. They are Maktab Perguruan Temenggung Ibrahim, Johor Bahru (MPTI), and Maktab Perguruan Batu Pahat, Johor (MPBP). This study covers non-graduate trainees with an entry qualification such as the Sijil Pelajaran Malaysia (equivalent to the Ordinary level) and Sijil Tinggi Pelajaran (equivalent to the Advanced Level). The non-graduate pre-service teachers undergoing training are systematically exposed to a complete range of course materials for a duration of 3 years. This study was further narrowed down to cover trainees majoring in 6 core subjects. Twenty trainee teachers were selected randomly from each course major. A total of 197 pre-service teachers from the fifth semester (final semester in the college prior to practical posting to schools) took part in this study. The data-collecting instrument consists of a questionnaire. Descriptive analysis was used to report the findings. It involved the use of frequency distributions and cross tabulations of independent variables. Contingency coefficient (c) was computed for all nominal data and Spearman correlation (r) was used to study relationship among ordinal data. All tests were reported at 0.05 level of significance basing on two tailed tests.

**Limitation of the Study**

This study was conducted on two teacher training colleges within the state of Johor. Hence, it might not reflect the exact scenario of other teacher training institutions in the country. The study was done with the trainees enrolled in the Malaysian Diploma Teaching Program. There were nine course majors offered in the program at the time of the study. Only fifth semester trainees from six course majors were selected. The information seeking behaviour of trainees from other course majors as well as other programs may vary. The study was conducted with pre-service teachers only. The perception of the lecturers, tutors and media specialist was not researched. Conclusions were derived from feedback given by respondents based on the questionnaires. It was limited by the interpretation made by the individuals towards the items in the questionnaire. The findings were also limited by the validity and reliability of the questionnaire.

## FINDINGS

### (a) Demographic Characteristics of the Sample

All the respondents comprised primary school trainee teachers. Of the respondents 37 (18.8%) were majoring in Malay studies; 36 (18.3%) in English studies; 22 (11.2%) in Chinese studies; 18 (9.1%) in Tamil studies; 43 (21.8%) were from Science major; and 41 (20.8%) from Mathematics major. In terms of ages, the trainees ranged from 18 years to 31 years. The majority of the respondents (61%) however, were within the 21 to 25 year age group. With reference to gender, 27.4 percent were males and 72.6 percent were females. This shows that in primary schools more female teachers are employed in contrast to males (Noran & Ahmad, 1993). With reference to qualifications, 61.9 percent of the respondents had Sijil Pelajaran Malaysia (O levels), 34.5 percent had Sijil Tinggi Pelajaran (A levels) and 3.6 percent had

Table 1: Demographic Characteristics of the Respondents

| No | Demographic characteristics | Frequency | Percentage |
|---|---|---|---|
| 1 | Age: < 20 years | 58 | 29.4 |
| | 21 to 25 years | 122 | 61.9 |
| | 26 to 30 years | 16 | 8.1 |
| | >31 years | 1 | 0.5 |
| 2 | Sex: Male | 54 | 27.4 |
| | Female | 143 | 72.6 |
| 3 | Academic qualification: | | |
| | SPM | 122 | 61.9 |
| | STPM | 68 | 34.5 |
| | Diploma | 7 | 3.6 |
| 4. | Course Major: | | |
| | Malay studies | 37 | 18.8 |
| | English studies | 36 | 18.3 |
| | Science | 43 | 21.8 |
| | Mathematics | 41 | 20.8 |
| | Chinese studies | 22 | 11.2 |
| | Tamil studies | 18 | 9.1 |
| 5 | CGPA: Low | 6 | 3.2 |
| | Medium | 70 | 37.4 |
| | High | 111 | 59.4 |
| 6 | College: MPBP | 102 | 51.8 |
| | MPTI | 95 | 48.2 |

Note: n = 197; CGPA (n=187)

diploma qualification. As for the Cumulative Grade Point Average (CGPA) the lowest score was 2.00 and the highest was 3.69. Thus, it was regrouped to Low (2.00-2.50), Medium (2.51-3.00) and High (>3.01). It was found that 59.4 percent of the respondents had CGPA scores above 3.00.

**(b) Information Needs and Feelings arising from these Needs**

Information is needed in all stages of work and activities of teachers. Kuhlthau (1988) describes information need as the initial stage of information seeking process. Trainee teachers were asked whether they needed information related to course work, health, family relations and other matters and the description of feeling arising from these needs. The time frame of the question was limited to the past three months to ensure respondents could recall critical incidents without depending on transient memory. Information related to course was the most frequently mentioned situational category. As many as 92 percent of the respondents needed information on course work. Thus, it is evident that everyday factual information (Hiland, 1973) to perform their course work responsibilities was highly sought. Since a sizeable portion of the trainee

teachers were married with families, information on health and family relations could be important. Information on health may also be needed when trainees encounter students while they are assigned to schools during their practical teaching. The results showed that information needs associated with health and family relations were needed by 72.6 and 71.2 percent of the respondents respectively. There was a significant correlation between information needs on health with course option (c=0.35, p=0.000) and college (c=0.20, p=0.004). More than 80 percent of trainees majoring in language studies (except for Chinese studies) required information related to health. There was also institutional variation with students from MPTI (82%) followed by MPBP (63.7%). There was also correlation between information on family relations and course option (c=0.33, p=0.000). The science trainees (83.7%) and mathematics trainees (77.5%) were the largest group that needed information on family relations.

There was a low awareness on information needs on other matters among the trainees. It was found that only 48 percent of the respondents needed information on topics unspecified in this study. Information needs associated to the use of computers in information technology was the most frequent 'other need' mentioned by the student teachers (Table 2).

There was significant correlation between the 'other' information needs and gender (c=0.20, p= 0.05). It was found that 68.6% of the male respondents needed information on 'other matters' compared to 45.5% females. There was also a significant correlation with information on other matters and qualification (c=0.19).

Table 2: Other Information Needs of Trainee Teachers

| Other Information Needs | N |
|---|---|
| Computer (Internet, information technology) | 17 |
| Education | 8 |
| Religion | 7 |
| Sports | 7 |
| Economics | 7 |
| Teaching service | 6 |
| Current affairs | 6 |
| Personal | 4 |
| Books | 1 |
| General knowledge | 1 |
| Counselling | 1 |

There was significant correlation between the 'other' information needs and gender (c=0.20, p= 0.05). It was found that 68.6% of the male respondents needed information on 'other matters' compared to 45.5% females. There was also a significant correlation with information on other matters and qualification (c=0.19, p=0.03). Trainees with diploma qualification (71.4%) and STPM qualification (63.9%) needed information on other matters compared to 41.7 percent among SPM qualified trainees.

**Feelings about Information Needs**

The respondents were made to indicate how they felt when faced with important information needs. Five statements describing the likely feelings were posted. Within the five, two were positively worded while three were negatively worded. Generally speaking, trainee teachers appear to exhibit positive feelings when faced with information needs. The

positive feelings of interest and excitement recorded a mean score of 3.2 and 3.01 respectively out of a maximum score of 4.

However, it is interesting to note that only 38.8 percent of the respondents 'felt strongly' to seek information due to interests and 27.2 percent were due to excitement. There was no correlation with any demographic factors and positive feelings arising from information needs. This shows that the majority of trainees expressed moderate positive feelings once their information need was recognised. As for negative feelings, most respondents 'felt little' rather than 'strongly' or 'moderately'. The mean score ranged from 2.4 to 2.1 (Table 3). The feeling of 'desperate' was indicated strongly among the negative feelings. Of the total respondents, 14.4 percent 'felt strongly' to seek information because they were 'desperate.' This might be so because trainees are forced to seek information when they have to complete their course work within a stated time period. There was significant association between the feeling of 'desperate' with type of course (c=0.38, p=0.003) and college (c=0.20, p=0.043). The Chinese major trainees recorded the highest (42.9%) feeling of 'desperate'. At the same time the trainees from MPBP (20.0%) indicated feeling 'desperate' strongly compared to (8.4%) from MPTI. Statistically significant correlation was also found in between the feeling of helplessness and type of course (c=0.35, p=0.017). It was found that those who opt for Chinese studies were the largest (45.5%) followed by the Malay studies group (27.3%).

### (c) Motivation for Information Seeking

The information seeking behaviour of individuals is motivated by the reasons for the information need, their purpose and the use the information is put into (Willson 1981 cited in Dunn 1986). Cronin (1981) defines information need as expressed needs, unexpected needs and dormant needs. Brittain (1970) classifies needs as stated by the user, needs the user cannot state; present needs; future and potential needs. Dunn (1986) has identified six psychological need factors that motivate undergraduate students in the information search process. They are the need for other-approval, need for success in the chosen profession, need for self-extension, need for self-approval, need for intellectual stimulation and the need related to successful college experience. Sixteen variables were used in this study to find out the underlying motives of trainee teachers seeking

Table 3: Feelings about Information Needs

| Nature of feeling indicated | Responses | | | | Mean | Standard Deviation |
|---|---|---|---|---|---|---|
| | 1 (%) | 2 (%) | 3 (%) | 4 (%) | | |
| a. Interested | 2.6 | 12.8 | 45.9 | 38.8 | 3.20 | 0.75 |
| b. Excited | 4.1 | 17.9 | 50.8 | 27.2 | 3.01 | 0.78 |
| c. Helpless | 21.5 | 48.7 | 24.1 | 5.6 | 2.13 | 0.81 |
| d. Troubled | 8.8 | 53.1 | 30.4 | 7.7 | 2.37 | 0.75 |
| e. Desperate | 14.9 | 42.6 | 28.2 | 14.4 | 2.42 | 0.91 |

Note: n=195 1=did not feel at all; 2=felt little; 3=felt moderately; 4=felt strongly

information based on the six psychological need factors proposed by Dunn.

The major reasons for trainees seeking information in order of importance were the need for success in the chosen profession, the need for a successful college life, and the need for self-extension (Table 4). Thus, the findings revealed that motivation for seeking information of pre-service teachers concentrates around their career. The needs for information to reinforce values and thinking, and to keep abreast with current affairs were only given moderate recognition by the trainees. These findings are similar to Dunn's (1986) research on undergraduate students where success in the chosen profession was cited as the prime motive for seeking information. The need for other-approval was the least preferred factor that motivated trainees to seek information. The need for other-approval (mean=2.79, SD=0.61) was not significantly related with any of the demographic factors. The pursuit of information to please or to impress others were clearly rejected. However, Dunn (1986) reiterates the need for other-approval as a major factor that motivates undergraduates to seek information.

The 'need for success in the chosen profession', was correlated with demographic factors and there was a significant relationship with course option (c=0.33, p=0.007). It was found that the Tamil studies group (94%) ranked the first (felt strongly), followed

Table 4:Motivation for Information Seeking

| | **Psychological Need Factors** | **Responses** | | | | **Mean** | **S D** |
|---|---|---|---|---|---|---|---|
| | | 1 (%) | 2 (%) | 3 (%) | 4 (%) | | |
| 1. | **Need for Other-Approval** | | | | | **2.79** | **0.61** |
| | -to get praise from lecturers | 15.9 | 42.1 | 25.1 | 16.9 | 2.43 | 0.95 |
| | -to avoid embarrassment at being unable to answer | 7.1 | 27.6 | 33.7 | 31.6 | 2.89 | 0.93 |
| | -to have something to talk about | 2.6 | 17.3 | 52.0 | 28.1 | 3.05 | 0.74 |
| 2. | **Need for Success in Chosen Profession** | | | | | **3.71** | **0.54** |
| | -to become a better teacher | 0.0 | 4.6 | 19.4 | 76.0 | | |
| 3. | **Need for Self-Approval** | | | | | **3.38** | **0.81** |
| | -to satisfy personal interest | 2.0 | 15.3 | 24.5 | 58.2 | | |
| 4. | **Need for Self-Extension** | | | | | **3.47** | **0.49** |
| | -to get reinforcement of values and thinking | 0.5 | 7.7 | 41.5 | 50.3 | 3.41 | 0.65 |
| | -to keep up with current affairs | 0.5 | 7.1 | 30.6 | 61.7 | 3.53 | 0.65 |
| | -to know more about your religion | 2.6 | 8.2 | 23.7 | 65.5 | 3.05 | 0.75 |
| | -to need to know more about life | 0.5 | 9.7 | 37.2 | 52.6 | 3.41 | 0.68 |
| 5. | **Need for Intellectual Stimulation** | | | | | **3.39** | **0.51** |
| | -to understand the situation better | 1.0 | 6.1 | 33.2 | 59.6 | 3.51 | 0.66 |
| | -to acquire knowledge | 0.5 | 3.6 | 20.4 | 75.5 | 3.70 | 0.55 |
| | -to satisfy inner drive in order to learn more | 4.1 | 19.9 | 39.3 | 36.7 | 3.08 | 0.85 |
| | -to gain excitement and fun from answers | 2.6 | 13.3 | 37.8 | 46.4 | 3.28 | 0.78 |
| 6. | **Need for Successful College Life** | | | | | **3.61** | **0.45** |
| | -to complete assignments | 1.5 | 5.1 | 20.5 | 72.8 | 3.64 | 0.65 |
| | -to get information during practical teaching | 2.0 | 4.1 | 31.6 | 62.2 | 3.54 | 0.67 |
| | -to get better grades | 0.5 | 6.7 | 22.6 | 70.3 | 3.62 | 0.63 |

Note: 1=did not feel at all; 2=felt little; 3=felt moderately; 4=felt strongly

first (felt strongly), followed closely by mathematics (85%) and Malay studies trainees (83.7%) to seek information 'to become a good teacher.' The need for intellectual stimulation was significantly related to their CGPA (r=0.148, p=0.04) and gender (c=0.31, p=0.02). It was found that the male trainees and those with higher CGPA were motivated by the need for intellectual stimulation.

**d) Information Resources or Channels Used by Trainee Teachers**

Sources of information include formal and informal; internal or external; oral or written; and personal. Information sources in this study are defined as the person, service, organisation and media through which information is made available to trainees. Personal knowledge and experience have been excluded in this study, because it is not often recognised as a primary source of information. It is assumed that a person's 'information seeking process' begins only after he or she realises that the current state of knowledge is insufficient to meet his or her needs (Wilkin, 1977; Atkin, 1973). In this section, seventeen common information sources were listed and the trainees were requested to indicate their frequency of use. The trainee teachers (95.6%) relied heavily on lecture notes as their most frequent source of information. Fellow course mates (88.8%) were the second most frequently used source, followed by college libraries (87.8%) and lecturers currently teaching them (80.1%). This shows an over dependence on internal sources rather than external sources of information (Table 5). In the printed source category, textbooks were the most popular sources consulted. Renowned printed materials such as journals, encyclopaedias, and indexes recorded low frequency of use. Hence, this study has similarities with studies done by Summers, Matheson & Conry (1983), which revealed that teachers tend to rely on sources that are traditional and close at hand such as colleagues, libraries and textbooks. The study by Dunn (1986) also revealed that teachers, college libraries, experts in the field and friends were ranked as most important sources sought by undergraduates to fulfil their information needs. The poor usage of printed sources besides textbooks should be given due consideration. The lack of awareness and familiarity with these information sources could have contributed to its low usage.

The study by Leckie, Pettigrew and Sylvian (1996) indicated that, general awareness about information sources and content could determine the path that information seeking behaviour will take. Direct systematic practical exposure would significantly increase the individual's usage of a variety of printed sources. Library instructions need to be incorporated into the curriculum to enable pre-service teachers to be conversant with library utilisation techniques. This would enable library resources to be fully exploited for their own advantage.

**Books read.** The number of books besides textbooks read (more than 50 pages) by the trainees during the past six months was examined to understand further the resources used by the trainee teachers.

Table 5: Frequency of Use of Specific Information Sources

| Sources of Information | Responses | | | | Mean | S.D |
|---|---|---|---|---|---|---|
| | 1 (%) | 2 (%) | 3 (%) | 4 (%) | | |
| Lecture notes | 0.5 | 1.0 | 2.6 | 95.9 | 3.93 | .330 |
| Fellow course mates | 0.5 | 1.5 | 9.1 | 88.8 | 3.86 | .424 |
| College library | 1.0 | 2.5 | 8.6 | 87.8 | 3.83 | .502 |
| Lecturers teaching you | 0.5 | 2.6 | 16.8 | 80.1 | 3.76 | .512 |
| Stack browsing | 2.0 | 6.1 | 18.8 | 73.1 | 3.62 | .692 |
| Textbooks | 2.0 | 5.6 | 21.8 | 70.6 | 3.60 | .688 |
| Radio | 13.2 | 3.6 | 13.7 | 69.5 | 3.39 | 1.05 |
| Television | 10.7 | 7.1 | 18.8 | 63.5 | 3.35 | 1.00 |
| Dictionaries | 6.1 | 13.7 | 43.7 | 36.5 | 3.10 | .859 |
| Family members | 14.2 | 18.8 | 34.0 | 33.0 | 2.85 | 1.03 |
| Educational journals and periodicals | 9.6 | 29.4 | 44.2 | 16.8 | 2.68 | .865 |
| Other libraries apart from college libraries | 19.9 | 24.9 | 40.1 | 15.7 | 2.52 | .977 |
| Encyclopaedia | 23.9 | 20.8 | 41.6 | 13.7 | 2.45 | 1.00 |
| Lecturers currently not teaching | 31.5 | 22.3 | 38.1 | 8.1 | 2.22 | .986 |
| Workshops, courses, seminars | 12.0 | 63.5 | 19.3 | 5.2 | 2.17 | .701 |
| Librarians | 40.1 | 18.8 | 25.9 | 15.2 | 2.16 | 1.11 |
| Indexes | 45.2 | 19.8 | 28.9 | 6.1 | 1.95 | .994 |

Note: 1=Never; 2=Once in a semester; 3=Once a month; 4=Every week

teachers. Generally, more books were read in the Malay language compared to English. The number of books read in the Malay language recorded a mean of 3.58, which was slightly higher than the national average of two books per year for the Malaysian public (NST, 1998, 23 October). Only 40 percent of the respondents had read more than 5 books in Ma-lay within the past six months (Table 6). Significant correlation could be established between the number of Malay books read with course option (c=0.43, p=0.001). Analysis showed that trainees from Chinese (22.7%) and English (2.9%) majors were the largest group of trainees who never read any Malay books. The number of books read in English were even lower (mean 2.08). One third of the total respondents indicated that they had never read any English books during the stipulated period. Even among the English major trainees, only 48 percent of them had read more than 5 English books within the past six months. A major reason as to why the trainees shun English books appears to be their poor command of the language. Previous studies on reading habits of student teachers in Malaysia also indicated poor reading habits, especially English books (Mohamed, 1994; Abdul Rahim, 1989; Khoo, 1982). The current revised teacher training curriculum does not seem to alleviate the situation. The situation is most alarming when aspiring teachers themselves start off as poor readers. This habit would most likely to persist when they become fully trained teachers. The teacher who seldom enjoys reading will have difficulties in producing enthusiastic readers.

Table: 6. Books Read by Trainee Teachers during the Past Six Months

| Types of Books (Language) | Number of Books Read ( more than 50 pages) | | | | | | Mean | S.D |
|---|---|---|---|---|---|---|---|---|
| | 0 (%) | 1 (%) | 2 (%) | 3 (%) | 4 (%) | 5 (%) | | |
| Books In Malay | 4.6 | 5.6 | 14.8 | 17.3 | 17.3 | 40.3 | 3.58 | 1.49 |
| Books in English | 30.1 | 14.3 | 14.8 | 15.8 | 8.2 | 16.8 | 2.08 | 1.83 |

Note: n=196

Moreover, he will become poor role models for their pupils (Mohamed, 1994). Teachers with positive attitudes towards reading would be more knowledgeable and prove themselves to be active information seekers. The latest development in any field gets reflected faster in English books. Hence, by shunning English books, the teachers will always keep themselves backdated. Thus teacher educators should devise systematic reading programs to enhance their students' reading interest, especially in the reading of English books which make up a sizeable number in the college libraries.

**Reading Newspapers**. Since newspapers can be considered as an essential source of information, the frequency of reading newspapers was studied. It was found that half the respondents read newspapers in Malay daily while, another quarter read it at least once a week. Significant correlation could be established between frequency of reading newspapers and several demographic factors such as course and sex. More than 50 percent of the trainees from all majors read the Malay newspapers everyday except for 9.1 percent from the Chinese major group (Table 7). More male (69.8%) respondents were found to read the Malay newspapers daily compared to females (46.9%). However, the interest in reading English dailies was discouraging as only ten percent of the total respondents read it everyday. The largest group that read the English dailies everyday were from the English major (25%) and the Tamil major (16%). As for the trainees who indicated that they seldom read the English dailies, the Chinese studies group topped the list (81.8%), followed by Malay studies (50%) and Science majors students (48%). Even then, only a quarter of the total English major trainees read the English newspapers daily. More English major trainees read the Malay language papers compared to English papers. More male

Table 7: Newspapers Read by Trainee Teachers

| Language | Frequency of Reading | | | | | Mean | STD |
|---|---|---|---|---|---|---|---|
| | 1 (%) | 2 (%) | 3 (%) | 4 (%) | 5 (%) | | |
| In Malay | 7.7 | 3.6 | 8.7 | 27.0 | 53.1 | 4.14 | 1.19 |
| In English | 41.0 | 12.3 | 6.7 | 29.7 | 10.3 | 2.55 | 1.51 |

Note: n=196 1=seldom; 2=at least once a month; 3=at least once a forth night;
4=at least once a week; 5=every day.

trainees (18.9%) were found to read the English newspapers daily compared to female trainees (7%). Teachers as information providers should be active users of the mass media in their daily lives. The earlier part of this study showed that about 40 to 50 percent of the trainees did not even watch the television nor listen to the radio weekly (Table 5). It is actually a general lack of interest rather than accessibility which should be blamed for poor readership of newspapers. After all newspapers are valuable sources of current information. Both college libraries and their respective residential colleges buy a variety of newspapers. Furthermore, newspapers could be obtained at reduced prices in the college stores. As such, it is imperative that pre-service teachers be motivated to read newspapers daily.

**e) Attributes of Information Sources**

Leckiee, Pettigren and Sylvian (1996) have listed familiarity, prior success, trustworthiness, packaging, cost and accessibility as the most important variables of sources related to selection of information. Accessibility, which could be influenced by physical proximity, and language used, was stated to be the more dominant factors. Studies by Chen and Hernon (1982) on the information seeking behaviour of public, stated accuracy as the most important criterion for choosing an information source. Holmes (1987) in her study on secondary school teachers found that characteristics of information that teachers preferred include convenience, accessibility, currency, relevance, computer technologies, appropriate staff and timeliness. In this study, attributes of information are categorised as external and internal attributes (Cheong, 1992). The external attributes are defined as characteristics of information source generally relating to accessibility, usability and quality. Nine responses using a 4-point Likert scale were used to determine the external attributes.

Overall findings indicate that accessibility was given the highest priority (mean 3.56) by the trainees. In this category, 'easily available' and 'timely service' were given the highest importance with a mean score of 3.68 and 3.65, respectively (Table 8). As for usability, trainees preferred to use information content in Malay (mean=3.61, SD=0.59) rather than in English (mean=2.65, SD= 0.88). The attribute of being 'highly recommended' interested the trainees most when quality of information was studied. Costs seemed to be the least important factor next to 'in English' among all the external attributes studied. Nearly 50 percent of the trainees were willing to pay for useful information as long as it met their needs. The results were similar to other researches on the information needs and information seeking behaviour of the public (Chen and Hernon 1982; Cheong, 1992) where monetary cost was found to be the least important criterion when selecting an information source.

There was statistically significant correlation between external attributes of information sources and several demographic variables. There was a positive correlation between CGPA and external attributes of information source such as easily available (r=0.17, p=0.019); timely service (r=0.20, p=0.001); accessible at any time (r=0.20,

Table 8: External Attributes of Information Sources

| | External Attributes of Information | Responses | | | | Mean | S.D |
|---|---|---|---|---|---|---|---|
| | | 1 (%) | 2 (%) | 3 (%) | 4 (%) | | |
| 1. | **Accessibility** | | | | | **3.56** | |
| | Easily available | 1.0 | 1.0 | 28.1 | 69.7 | 3.66 | 0.55 |
| | Timely service | 1.0 | 4.1 | 23.5 | 71.4 | 3.65 | 0.60 |
| | Accessible any time | 0.0 | 6.1 | 31.6 | 62.2 | 3.56 | 0.60 |
| | Convenience in location | 2.6 | 9.2 | 33.8 | 54.4 | 3.40 | 0.76 |
| 2. | **Usability** | | | | | **3.28** | |
| | In Malay | 1.0 | 2.6 | 30.1 | 66.3 | 3.61 | 0.59 |
| | Easy to use | 0.5 | 3.6 | 38.8 | 57.1 | 3.52 | 0.59. |
| | In English | 10.7 | 30.1 | 41.8 | 17.3 | 2.65 | 0.88 |
| 3. | **Quality** | | | | | **3.38** | |
| | Highly recommended | 1.5 | 7.1 | 36.7 | 54.6 | 3.44 | 0.69 |
| | Inexpensive | 3.1 | 11.2 | 36.2 | 49.5 | 3.32 | 0.79 |

Note: 1=least important; 4=most important

p=0.006); and highly recommended (r=0.20, p=0.005). Respondents with a higher CGPA gave greater importance to accessibility of information. Respondent's course major also significantly correlated with external attributes like 'in Malay' (c=0.35, p=0.025); 'in English' (c=0.52, p=0.000); and 'inexpensive' (c=0.35, p=0.02). It was found that 88.9 percent of the Malay studies respondents gave great importance to sources 'in Malay', at the same time only 50 percent of the English studies (the lowest) respondents considered sources 'in Malay' as the most important. On the other hand the English optionists indicated the highest preference (55%) for information sources in English, while the Chinese Studies trainees (42.9%) least preferred information sources in English. Information sources 'in English' were significant when correlated with gender (c=0.20, 0.031). Findings show that 19 percent of the females indicated English as the most important attribute of information source, compared to only 13% of males. Thus, it can be concluded that information sources in English are given low preference by a majority of trainees and even among the English optionists it was only moderately preferred.

**Internal Attributes of Information Sources.** Internal attributes are defined as characteristics related to the content of a readily available information from a given source. Here, the attributes studied included the currency and volume of information, information that is understandable, credible, comprehensive, and directly relevant to need. Respondents were asked to rank the six internal attributes of information in their order of importance when selecting an information source. It was to identify how often each of the six attributes was Ranked first. Table 9 was constructed based on the number of people who

Table 9:Internal Attributes of Information Ranked as First when Selecting an Information Source.

| Attributes | N | Percentage |
|---|---|---|
| 1. Information directly relevant to need | 52 | 31.1 |
| 2. Currency of information | 45 | 26.9 |
| 3. Credible information | 25 | 15.1 |
| 4. Volume of information | 19 | 11.4 |
| 5. Comprehensive information | 14 | 8.4 |
| 6. Information that is understandable | 13 | 7.8 |

ranked a given attribute as the first among the six.

The findings indicate that relevancy of information was the most important (31.1%) internal attribute. Currency of information (26.9%) and credibility of information (15.1%) ranked second and third respectively. Relatively minor considerations were given to attributes such as 'comprehensive(ness)' (8.4%) and 'understandable(lity)' (7.8%). To determine the relative importance of internal attributes of information sources, each was labelled as 'most important' if ranked first or second. Attributes respondents ranked third or fourth, and fifth or sixth were labelled as 'important' and 'least important', respectively. Table 10 summarises the rankings. The rankings of 1, 2, 3,and 5 shown in Table 9 match with that in Table 10. However, it is interesting to note that the trainees regard information that is 'understandable' as fourth in rank in exchange with the 'volume of information' in Table 10. This could be due to the fact that large portions of the college library materials are in English and understanding would be a crucial factor for those who are weak in the language.

Statistically significant correlation was found between course options and various internal attributes of information sources such as information directly relevant to my need' (c=0.45, p=0.014); currency of information (c= 0.44, p=0.02); and information that is understandable (c=0.43, p=0.033). The Malay studies trainees ranked ‘information directly relevant to my need’ as first (62.0%).' 'Currency of information' was ranked 'most important' by more than 50 percent of the Chinese studies and Tamil studies trainees. The Tamil studies group (41%) ranked 'information that is understandable' as the most important criterion when it comes to selection of an information source. There was a significant correlation between 'volume of information' and gender (c=0.26, p=0.029). The female trainees (73.6%) ranked 'volume of information' as the most important attribute compared to males.

Table10: Relative Importance of Internal Attributes of Information Sources in Selecting Information Sources

| Attributes | Most Important | Important | Least Important | Mean | S. D |
|---|---|---|---|---|---|
| | (%) | (%) | (%) | | |
| 1. Information directly relevant | 46.1 | 24.0 | 29.9 | 3.86 | 1.93 |
| 2. Currency of information | 45.9 | 24.0 | 30.5 | 3.88 | 1.78 |
| 3. Credible information | 33.8 | 41.6 | 24.7 | 3.69 | 1.55 |
| 4. Information that is understandable | 27.1 | 45.2 | 27.7 | 3.48 | 1.48 |
| 5. Comprehensive information | 25.3 | 35.0 | 39.8 | 3.16 | 1.57 |
| 6. Volume of information | 22.8 | 29.6 | 47.6 | 2.92 | 1.74 |

**f) Problems Associated with Locating Information**

Problems experienced by individuals seeking information arose in all stages of information seeking process (Kuhlthau, 1988). This study only focuses on the collection stage where users gather information related to a focused topic after formulating their information need. The INFORSS study conducted by Bath University (1971) cites barriers to information related to teachers as due to shortage of time, inadequate library facilities, and insufficient opportunities for informal exchange of information. Matheson (1979) found that the time taken to look for and read information ranked as a major problem among educators seeking information. Seven aspects related to problems of locating information were: (i) where to locate information; (ii) how to use indexes or other sources which could lead to information; (iii) how to locate up-to-date information; (iv) adequate time to locate information; (v) non-availability or inaccesssibility (vi) how to use the OPAC to search information, and (vii) understanding the computer language. Respondents were required to indicate the degree of their problem.

Results showed that the mean value for all the problems varied from 1.83 to 2.83 with the standard deviation higher than 0.81 for all items (Table 11). The lower mean score would indicate a higher intensity of the problem. Sources being 'unavailable and/ or inaccessible' was the most severe problems cited by the trainees in the process of locating information. Of the total respondents, 45.6 percent had 'great problem' due to unavailability or inaccessibility of sources. There was no significant correlation between unavailable or inaccessibility of sources and all demographic characteristics. From this it can be inferred that teacher training colleges should upgrade their collection to meet the needs of the users or trainees do not know how to search for information. A check into one of the college libraries revealed that readers were instructed to put back books in the respective shelf after using. As a result a sizeable number of books were misplaced. There were insufficient library assistants to do daily shelving.

Table 11: Problems Encountered by Trainee Teachers when Locating Information for Assignments

| **Problems When Locating Information** | Great Problem (%) | Some problem (%) | Little problem (%) | No problem (%) | Mean | S.D |
|---|---|---|---|---|---|---|
| 1.Sources being unavailable and/ inaccessible. | 45.6 | 28.7 | 22.6 | 3.1 | 1.83 | 0.88 |
| 2.Having time to adequately locate information. | 24.1 | 33.8 | 27.2 | 14.9 | 2.32 | 1.00 |
| 3.Using OPAC to search information. | 31.1 | 25.9 | 21.2 | 21.8 | 2.33 | 1.13 |
| 4.Locating up-to-date information. | 11.3 | 35.4 | 39.0 | 14.4 | 2.56 | 0.87 |
| 5.Use of use indexes or other sources leading to information. | 7.7 | 33.3 | 44.6 | 14.4 | 2.65 | 0.81 |
| 6.Understanding the computer language. | 13.9 | 21.1 | 35.1 | 29.9 | 2.80 | 1.01 |
| 7. where to locate information | 5.2 | 28.9 | 43.3 | 22.7 | 2.83 | 0.83 |

'Having time to locate information' was the second major problem with 23.9 percent of the respondents having 'great problem'. There was a significant negative correlation among trainees 'having time to locate information' and their CGPA ($r= -0.15$, $p=0.035$). It is interesting to note that those with lower CGPA faced greater time constraints in locating information.

Using Online Public Access Catalogue System (OPAC) was the third important problem encountered by the trainees. Thirty one percent of the trainees faced 'great problem' using computerised searching, while only 21.8 percent indicated 'no problem' using OPAC. There was no significant correlation between the use of OPAC and demographic factors. This could be due to the reason that trainees are not given systematic exposure on OPAC searching strategies. The OPAC system in both the college libraries were based on dBase IV. A browse into the OPAC of the college libraries revealed that there were inadequate subject headings within the catalogue. Most books are entered based on the author and the title directly.

As for 'locating up-to-date information' a large portion of the respondents (74%) faced 'some' or 'little problem'. There was no significant correlation between problems associated with 'locating up-to-date information' and demographic factors. This might be due to the fact that

the collections in both the college libraries consist mainly of book materials. They do not subscribe to many of the latest journals due to lack of funds. Problems associated with knowing how to use indexes or other sources leading to information; understanding computer language; and knowing where to locate information also showed no significant correlation with demographic factors.

**g) Trainees' Computer Skills Associated with Information Seeking Process**

Computers and computing skills are playing significant roles in education. The employee related key competencies in all countries give importance to information processing in all types of work (Australian Education Council and Ministries for Vocational Education, Employment and Training, 1992). Teachers who are directly related to the task of information provision are expected to exhibit excellent computer skills. Teachers in all disciplines should possess computer-based information processing skills besides being able to use the computer as a teaching tool (IFIP, 1976; Peter, 1984). The infusion of the 'smart school' concept in the current Malaysian school environment makes it all the more necessary for teachers to acquire computer skills. The computer skills of trainees in this study were identified by investigating the frequency of computer usage both for general and specific purposes. It was found that the frequency of computer usage by trainees for all purposes ranged from one to ten times per week. The mean score was, however, 3.26, with 30.2 percent of pre-service teachers using computers only once per week. This revealed that a third of the trainees used the computer only during their computer lessons, which was held once a week. The major reasons could be due to the lack of accessibility and shortage of computer laboratories. Trainees seldom have their own personal computers in colleges due to security reasons and financial constraints.

The frequency of computer usage among trainees for specific purposes has been studied by employing nine variables. These variables were later categorised into uses related to fun and entertainment; seeking information; processing information; and presenting information. There was one open-ended question to enable respondents to list uses other than those not specified. A content analysis was done to study the responses. The frequency of use of computers for 'presenting information' was the highest among all other types of categories of use with a mean score of 3.68 (SD 0.77) out of a maximum of 5. The most popular use of computers by the trainees was to type assignments. It was found that 60 percent of the trainees used computers very frequently to type assignments. There was a significant correlation between the frequency of use of computers to present information and demographic factors related to college ($c=0.29$, $p=0.013$), course option ($c=0.45$, $p=0.04$) and CGPA ($r=0.22$, $p=0.013$). It was found that 63.6 percent of the MPTI trainees indicated 'excellent' skills in presenting information, compared to 36.4 percent from MPBP. The Tamil studies (83.3%) and the Malay studies (56.7%) group recorded the highest frequency of

use of computers for presenting information. The use of computers for presenting information increased with higher CGPA of the trainees. Hence, this shows that students with better grades used computers more frequently to type assignments.

The frequency of use of computers for 'seeking information' was low with 54.6 percent of the trainees indicating seldom or never. In this category, the use of OPAC was the most frequent while the use of online database was least frequent (Table 12). It was found that a large percentage of the trainees had never used the on-line databases (56.4%), CD-ROMs (34.9%) and Internet (33.4%) to seek information. This is a clear indication that trainee teachers lack computer skills to seek information. The frequency of computer usage for 'processing information' was also poor. Results show that 31.8 percent of the trainees have never used computers to process data, despite various stages of the teacher training curriculum having emphasis on research. There was a significant correlation between the use of computers for processing information with college ($c=0.26$, $p=0.005$) and qualification ($c=0.29$, $p=0.016$). Analysis showed that 33 percent of the MPTI trainees had never used computers to process information compared to 11 percent from MPBP. This was largely due to the exposure the trainees obtained during their course.

Table 12: Frequency of Computer Usage by Trainee Teachers for Specific Purposes

| **Frequency of Computer Use (n=195)** | **Responses** | | | | | **Mean** | **S.D** |
|---|---|---|---|---|---|---|---|
| | 1 (%) | 2 (%) | 3 (%) | 4 (%) | 5 (%) | | |
| **Presenting Information** | **1.0** | **2.1** | **28.3** | **43.3** | **25.3** | **3.68** | **0.77** |
| Use the computer to type reports or assignment | 2.1 | 3.1 | 7.7 | 26.8 | 60.3 | 4.40 | 0.92 |
| Use the computer to create graphs and tables | 13.8 | 17.4 | 33.8 | 28.2 | 6.7 | 2.96 | 1.13 |
| **Seeking information** | **6.7** | **48.0** | **28.3** | **14.9** | **2.0** | **2.23** | **0.85** |
| To look for information in the Internet | 33.8 | 22.6 | 25.1 | 9.7 | 8.7 | 2.36 | 1.27 |
| To look for information in the CD-ROM sources | 34.9 | 24.1 | 25.6 | 11.3 | 4.1 | 2.25 | 1.16 |
| To look for information in online databases | 56.4 | 22.1 | 14.4 | 6.7 | 0.5 | 1.72 | 0.97 |
| To look for information in OPAC | 21.6 | 23.7 | 33.5 | 14.9 | 6.2 | 2.60 | 1.16 |
| **Processing Information** | | | | | | **2.20** | **1.03** |
| Use the computer to compute statistical data | 31.8 | 28.7 | 27.7 | 10.8 | 1.0 | 2.20 | 1.03 |
| **Entertainment and Fun** | **21.0** | **41.6** | **25.6** | **8.2** | **3.6** | **2.11** | **0.93**1 |
| Use the computer to play games | 24.6 | 23.6 | 33.3 | 11.8 | 6.7 | 2.52 | .17 |
| Use the computer for Internet Relay Chat (IRC) | 65.6 | 13.8 | 10.3 | 5.6 | 4.6 | 1.69 | 1.14 |
| **Other uses** (n=120) | 62.3 | 10.4 | 7.8 | 7.8 | 11.7 | 1.96 | 1.44 |

Note: 1=Never; 2=Seldom; 3=Sometimes; 4=Frequently; 5=Very Frequently

Trainees who entered the college with diploma qualifications used computers to process information more frequently. It was found that 28 percent of respondents with diploma qualification used computers more frequently compared to 7.5 percent with STPM and 4.2 percent with SPM qualifications. This variation could be attributed to prior experience in information processing before gaining entrance to teacher training colleges.

The fun and entertainment category was the least popular among all other categories of use (mean score 2.11, S.D. 0.93). It was found that 21 percent of the trainees never used the computer for this purpose. An interesting point to note is that 65.6 percent of the respondents had never used the computer for IRC. This clearly indicates that the trainees lacked experiences and were unaware of such a service. There was significant correlation between the use of computers for fun and entertainment with college (c=0.27, p=0.043). It was found that 27 percent of the MPBP trainees had never used computers for entertainment compared to 14.7 percent from MPTI.

Only 120 out of the 197 trainees surveyed responded by stating their frequency of computer usage for 'other' purposes. Among them only 8 trainees indicated their use explicitly and they are summarised as follows: - watching movies 2; sending e-mail 3; listening to songs 2; constructing homepage 1.

**Competencies in Using Selected Computer Programs**

Direct or indirect knowledge of various information sources and process play a crucial role in the overall information seeking process of an individual (Leckie, Pettigrew, Sylvas, 1996). The frequency of computer usage is directly related to the ability of trainees to use various computer software programs to seek and process information. Nine computer programs mentioned in the current Malaysian Diploma in Teaching curriculum (Malaysia, KPM 1996) were identified and the trainee's competencies in using these programs were studied. The overall results revealed that the respondents' ability to use all the programs ranged from fair to poor with their mean score below 3.17 from a total of 5 (Table 13). Only the use of Microsoft Word was indicated as good with a mean score of 4.04. Software programs that were related to 'processing information' scored the highest mean (2.8). This is because respondents from both the colleges were taught dBase. Even though the trainees were requested to do research in various stages of their course, 37.4 percent of the trainees indicated that they 'don't know' how to use SPSS. The respondents' ability to 'process information' was significant with demographic factors such as college (c=0.37, p=0.001); course option (c=0.53, p=0.006); and qualification (c=0.33, p=0.44). Trainees from MPTI were found to be more competent in using programs related to information processing with 2.1 percent indicating 'don’t' know' compared to 26.3 percent from MPBP. The wide variation was due to the fact that MPBP despite having four computer laboratories had only one laboratory equipped with hard drives facility. As such the college only teaches the dBase III version using floppy drives.

Table 13: Trainee Teachers' Ability to Use Selected Computer Programs

| Computer Programs | Responses | | | | | Mean | S.D |
|---|---|---|---|---|---|---|---|
| | 1 (%) | 2 (%) | 3 (%) | 4 (%) | 5 (%) | | |
| **Processing Information** | **0.0** | **18.5** | **44.8** | **29.4** | **3.6** | **2.80** | **0.80** |
| Dbase | 4.1 | 21.0 | 40.5 | 25.1 | 9.2 | 3.14 | 0.98 |
| Excel | 11.93 | 14.9 | 28.9 | 33.08 | 11.3 | 3.17 | 1.17 |
| SPSS | 7.4 | 24.6 | 29.2 | | 0.5 | 2.09 | 1.01 |
| **Seeking Information** | **52.3** | **21.0** | **12.8** | **9.7** | **4.1** | **1.92** | **1.18** |
| Visiting Web Sites | | | | | | | |
| **Presenting Information** | **1.0** | **33.5** | **38.1** | **24.7** | **2.5** | **2.53** | **0.80** |
| Microsoft Words | 1.0 | 5.2 | 14.4 | 47.4 | 32.0 | **4.40** | 0.87 |
| Sending E-mail | 46.2 | 22.1 | 16.4 | 10.3 | 5.1 | **2.06** | 1.22 |
| Power Point | 20.0 | 19.52 | 24.6 | 26.2 | 9.7 | **2.8** | 1.27 |
| Home Page Construction | 49.2 | 1.5 | 20.5 | 6.7 | 2.1 | **1.9** | 1.07 |
| Building Multi-Media Soft ware | 50.3 | 24.1 | 21.5 | 3.6 | 0.5 | **1.8** | 0.93 |

Note: 1=Don't Know; 2=Poor; 3=Fair; 4=Good; 5=Excellent

As for course option 31.8 percent of the Chinese major trainees indicated 'poor' or 'don't know' how to use computer programs related to information processing. On the other hand 22.3 percent of the Tamil studies and 20 percent of the English major trainees indicated 'good' to 'excellent'. This factor can be explained by institutional variation as all the Chinese major respondents were from MPBP and all the Tamil major trainees were from MPTI. Respondents with a higher entrance qualification also indicated better ability to use information processing software.

The respondent's ability to use computer programs associated with 'presenting information' resulted in a mean score of 2.53 (Table 13). The trainees exhibited excellent ability (32%) to use Microsoft Words with only one percent stating 'don't know'. At the same time, a large fraction of the trainees did not know how to use software programs linked to multimedia systems (50.3%), homepage construction (49.2%), and e-mail facilities (46.2%). This showed that trainees were only exposed to typing software during their tenure in the college even though the curriculum mentions a variety of programs related to presenting information that needs to be taught. Statistically significant correlation could be established between 'presenting information' with college (c=0.40, p=0.002) and course (c=0.61, p=0.007). Again 47 percent of the MPBP respondents indicated 'poor' and below in using software for presenting information compared to 12.6 percent from MPTI. The institutional variation could be due to the lack of facilities where trainees from MPBP were generally exposed to the programs such as 'professional write' using floppy drives. The Tamil studies

trainees (16%) showed the highest level of competence in using computer programs for presenting information. This could be explained by the fact that all the Tamil major trainees were from MPTI, which had better facilities.

Competency associated with 'seeking information' was studied by the ability of trainees to visit web sites. The results revealed that 52.3 percent of the respondents did not know how to visit web sites (Table 13). This clearly shows the lack of exposure of trainees in the use of Internet in colleges. There was only one single Internet connection made available to trainees in both the colleges and the use was highly restricted. Trainees are not given hands on practice on the use of Internet even though it was required within the syllabus. Statistically significant correlation could be established between 'seeking information' with the nature of the course ($c=0.45$, $p=0.000$) and sex ($c=0.22$, $p=0.033$). The English major trainees (11.4%) exhibited excellent ability to visit web sites compared to others. This might be due to their ability to understand English better. More female trainees (58.56%) were found to have 'excellent' skills in visiting web sites than males (35.8%).

The trainees' ability to use selected computer programs related to 'information presenting', 'processing' and 'seeking' was correlated with the frequency of usage of these computer programs which had been studied earlier. There was a significant association between the ability of trainees to use computer programs and their frequency of use related to 'information presenting' ($r=0.39$, $p=0.000$); 'information processing' ($r=0.42$, $p=0.000$); and 'information seeking' ($r=0.57$, $p=0.000$). Thus, the findings show that if trainees are exposed to a variety of computer programs, their frequency of use also increases.

**h) Evaluation of Information Sources**

Informal or interpersonal sources govern the first source trainee, teachers consulted to obtain information when they faced problems concerning their course work. Among eight different types of information sources listed, lecturers and friends were named as the most important first source consulted in order of importance (Table 14). Two trainees mentioned Internet as their first source. An analysis of the first choice of information source mentioned by the trainees based on the eight different types listed, revealed five to be the most frequently used sources during the information seeking process which was studied earlier (Table 5). Trainee teachers who wanted to seek additional information besides those provided by their first source were asked to indicate their second and third sources. Textbooks and friends were quoted as the major second source consulted by the respondents, while friends were again ranked as the third prominent source used. It should be noted here that electronic media and family members were seldom consulted. The lack of popularity of the electronic media (Internet, CD-ROMs, and online database) shows that trainee teachers were largely unfamiliar with these sources.

Of the total respondents, 44.6 percent indicated that the principal reason behind their first choice of source was that it was most 'authoritative', 26.7 percent felt it was 'quickly available' and 24.6

Table 14: List of Choices of Information Sources Consulted by Trainee Teachers

| Information Sources Consulted | First Choice (%) | Second Choice(%) | Third Choice (%) |
|---|---|---|---|
| Lecturers | 49.2 | 20.1 | 14.0 |
| Friends | 25.4 | 22.8 | 26.9 |
| Lecture Notes | 9.1 | 8.5 | 17.2 |
| Library | 7.6 | 13.8 | 9.1 |
| Text books | 7.1 | 23.3 | 11.3 |
| Electronic Media | 1.0 | 4.3 | 8.1 |
| Family Members | 0.5 | 0.5 | 4.8 |
| Magazine and Newspapers | 0.0 | 6.8 | 8.6 |
| Total | 100 | 100 | 100 |

Table 15: Portion of Useful Information obtained from First Source Consulted.

| Rate of Success | Frequency (n) | Percentage |
|---|---|---|
| 0 - 25 % | 3 | 1.6 |
| 26 - 50 % | 53 | 28.0 |
| 51 - 75 % | 91 | 48.1 |
| 76 - 100 % | 42 | 22.2 |
| Total | 189 | 100 |

percent indicated it as 'easily available'. About 60 percent of the respondents indicated that the first consulted source did not provide them with all the information needed. However, 50 percent of the trainee teachers agreed that the first source provided 50 - 75 percent of their necessary information (Table 15). The findings were similar to that of Hiland (1973). In her study on social science teachers informal information systems were found to be popular and the first source consulted also provided a majority of information needed. In addition, she also found that the teachers relied on textbooks and conversation with colleagues as major information sources. Matheson (1979) and Holmes (1987) also found teachers relied on text-books and conversation with colleagues as prime information sources. Their studies showed accessibility and convenience to be the reasons for the teachers' heavy reliance on textbooks and fellow colleagues. If this is so, greater effort should be made to make other resources accessible and easier to use.

The first choice of information source significantly differed with academic qualification (c=0.32, p=0.020), nature of course (c=0.53, p=0.000) and college (c=0.24, p=0.050). Respondents with higher academic qualifications preferred to use their lecturers as their first source (Diploma 71.4%; STPM 63.2%; SPM 40.5%). However, respondents with lower qualifications tend to depend on friends as their first source of information (SPM 34%; STPM 13.2%; Diploma 0%). Lecture notes were indicated as the first source by 28.6 percent of the diploma students, followed by STPM (8.8%) and SPM (8.3%) students. In terms of

institutions, trainees from MPTI (52.6%) relied more on lecturers as their first source of information compared to the trainees from MPBP (46.1%). Respondents from MPTI (28.4%) also depended more on friends as their first source compared to those from MPBP (22.5%). The MPBP trainees relied more on libraries and lecture notes. More than 50 percent of trainees from all course majors (except for Mathematics and Chinese) preferred lecturers as their first source of information. Mathematics major trainees (43.9%) in turn depended heavily on friends compared to any other group. The Chinese major trainees (40.9%) depended mostly on libraries as their first source compared to others. The second source of information consulted did not significantly differ with demographic factors. The third source, however, correlated with the nature of course (c=0.52, p=0.020). Here, more than 21 percent of the respondents from all course majors preferred to use friends as their third source of information with the largest group coming from the Tamil (41.2%) and Chinese (36.4%) majors.

**Evaluation of Libraries.** Libraries are traditionally ranked as an important information source in academic institutions. The number of times trainees visited the college library (not for reading personal materials) varied from 0 to 12 times a week. The number of trainees who visited the college library 3 times formed the largest group (36.4%). As such, the trainees' evaluation of various types of libraries form an integral part of the information seeking behaviour of trainee teachers. The trainee teachers rated the public libraries as most excellent when asked to rate public, college, school, personal and other libraries. The college library only received the third best rating after other libraries. More than 60 percent of the respondents rated the college library and the public library as either 'excellent' or 'good'. Personal library was rated as the poorest among the main types of libraries studied (Table 16). Only 93 out of 197 respondents indicated the use of 'other libraries'. Of the 93 respondents only 20 specifically named the 'other libraries' they used. The number of respondents who used the other types of libraries were as follows: 2-national library; 7-state library; 8-mobile library; and 3- university library. This indicates a lack of exposure among trainees about other academic libraries.

Significant difference could be established between the various types of libraries studied (Table 16). Only 93 out of 197 respondents indicated the use of 'other libraries'. Of the 93 respondents, only 20

Table 16:Evaluation of Types of Libraries by Trainee Teachers.

| **Type of Library** | **Evaluation** | | | | | |
|---|---|---|---|---|---|---|
| | Excellent | Good | Fair | Poor | Don't know | N |
| Public Library | 30.8 | 32.3 | 26.2 | 5.6 | 5.1 | 195 |
| College Library | 16.9 | 48.2 | 29.7 | 5.1 | 0 | 195 |
| School Library | 4.1 | 35.2 | 45.1 | 11.4 | 4.1 | 193 |
| Personal Library | 3.7 | 23.8 | 33.3 | 20.6 | 18.5 | 189 |
| Other Libraries | 18.3 | 12.5 | 9.6 | 8.7 | 51.0 | 93 |

respondents specifically named the 'other libraries' they used. The number of respondents who used the other types of libraries were as follows: 2- national library; 7- state library; 8-mobile library; and 3- university library. This indicates a lack of exposure among trainees to other academic libraries.

Significant difference could be established between the various types of libraries rated by the trainees and college. Trainees from MPBP and MPTI generally rated the college library as 'good' with 47.1 percent and 49.5 percent respectively. However, the trainees' perception of public libraries differed largely with 44.1 percent of the MPTI respondents marking it as 'excellent' compared to 18.6 percent from MPBP.

When respondents were asked to indicate their most heavily used library, 84.2 percent of the respondent mentioned the college library. Only 10.4 percent stated the public library as the most popularly sought library. The response was surprising even though the trainees rated public libraries as most excellent but frequented college library most. This shows that sources that were close at hand were more popular among respondents. There was a significant correlation between the libraries trainees used most and demographic factors like college, course and CGPA. More trainees from MPBP (91%) preferred the college library compared to those from MPTI (77.2%). At the same time only 3 percent of the trainees from MPBP used the public library most compared to 18.8 percent from MPTI. This difference could be due to accessibility as mentioned earlier. More than 80 percent of the respondents from all majors indicated that they used the college library most except for English (65.4%) and Science (74.4%) majors trainees. Students with higher CGPA used college library more and those with a lower CGPA were found to use public libraries more.

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## CONCLUSION

The information seeking behaviour of trainee teachers cannot be reduced to a simplistic analysis of sources alone because it involves greater understanding of the various roles the students perform for their tasks that prompts information needs. The trainees' need for information is conceptualised as heavily influenced by their course requirements and tasks given by the instructors. The resulting information seeking activity is motivated by the need to become a good teacher and for successful completion of the college life. The products of the information seeking activity are based on interacting forces such as accessibility, familiarity and awareness of information sources; skills associated with information seeking process; and governed by the preference toward national language. There was a general lack of interest in reading books and newspapers. Lack of time was one of the major limiting factors in the information seeking process. Library and media specialists in colleges should re-examine their collection to meet the requirements of their trainees and the teacher training curriculum. Having a large collection of resources would not necessarily solve this problem. The resources should be

systematically catalogued and regularly shelved to facilitate accessibility. Besides, adequate subject headings should be provided in the electronic catalogue. Trainees should be exposed to various types of resources and search strategies during their library orientation program. The trainees' incompetence in using major computer software programs was largely due to unfamiliarity. Colleges need to improve their computer facilities to tackle this problem. A number of computer software programs used found to be unlicensed. Lecturers usually erased the programs in the computers after every lesson and reloaded them whenever necessary.

It should be noted that if trainees do not acquire proper information seeking skills in teacher training college education, the chances are that they might not learn them on their own. Teachers who lack the skills to identify and locate information may not know how to locate and obtain good quality resources for teaching, and then the quality of instruction for students would be adversely affected. The teachers may be settling for the minimum or whatsoever is most easily or quickly available. Furthermore, these teachers may also fail to impart proper information searching skills to their students. Teacher training colleges should serve as avenues that provide a variety of experiences and enable trainees to optimise the use of available information re-sources. The ultimate goal of teacher preparation programs as such, should challenge pre-service teachers to develop an on-going level of professional commitment that will improve the quality of teaching.

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