

**FROM TOUR TO PROBLEM SOLVING : EVOLUTION OF LIBRARY  
INSTRUCTION PROGRAMMES IN TUN SERI LANANG LIBRARY  
UNIVERSITI KEBANGSAAN MALAYSIA**

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**ABSTRACT**

*Academic librarians play an important role in meeting the complex challenges of contemporary education by concerning themselves not only with supplying information sources but also in designing and managing proper library instruction programmes. This article gives an account of the library instruction programmes managed at the Tun Seri Lanang Library (TSL), Universiti Kebangsaan Malaysia (UKM). To impart library skills, the library developed six basic instruction programmes. These include the Tanggaton Tun Seri Lanang, Information search process through problem solving and the Tun Seri Lanang Clinic. The six basic instruction programmes were constantly evaluated and changes made to the modules after considering feedback from participants.*

**Keywords:** Library instructions, User education, Bibliographic instruction, Problem solving, Information searching skills, Library skills.

**INTRODUCTION**

The complex challenges of contemporary education have forced libraries to advance along with many other components of important social and educational activities. As a result, libraries now use sophisticated means of storing, retrieving and disseminating information. However, the future direction of academic libraries and library services depends not just on technological innovations but on human creativity and ingenuity (Ford, 1991). This means that if librarians see their role as meer suppliers of information sources, they are doing students a disservice.

Libraries are becoming more user oriented and are increasingly concerned with proper management of library instruction programmes. Many and varied programmes which aim to motivate and encourage the use of library resources and better educate patrons in the use of information sources have been devised and practised in libraries.

The need for library instruction in universities and colleges is evident. Columbia University's President Barnard stated that, 'The average college student ... is ignorant of the greater part of the bibliographical apparatus which the

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skilled librarian has in hourly use ... and that systematic instruction would start them in the right methods ..." (Columbia University, 1883). Nineteen years later, Columbia University's President Harper stated, "The equipment of the library will not be finished until it shall have upon its staff, men and women whose entire work shall be, not the care of books, not the cataloging of books, but the giving of instruction concerning their use" (Harper, 1902).

Library instruction should be an important component in the education of to-day's undergraduate students. Without library skills, a person is likely to use and reuse only a minimum number of library resources.

There are various types of library instruction employed in university libraries. The wide range of programmes adopted range from the use of path-finders to work-books, interactive video, slide presentations on library services, library orientations and tours, lectures, use of expert systems, hypertext technology, course-integrated library instruction and formal credit library skill courses. Beaubien, et al (1982) proposed seven most common modes of bibliographic instruction. These include, printed materials (information sheets, bibliographies, discipline guides and pathfinders); audio visual presentation; point-of-use explanation; programmed instruction; single lectures; formal courses and tutorials (Bibliographic instruction handbook, 1979). There has been an emphasis on a turn-around user education programme such as integrating user education as part of a course (Morris, 1983; Lester, 1979; Stephenson,

1981; Carlson and Miller, 1984). The integrated user education programme was pioneered by Patricia Knapp at Montith College (Knapp, 1966). Since then many examples of integrated user education have been reported, which includes, the integration of user education with the B.Sc. course at North East London Polytechnic (Morris, 1983), and Wolverhampton Polytechnic (Hare, 1984). There is growing interest in using CAL and hypertext techniques in user education (Hutchings, 1990).

The Tun Seri Lanang Library (TSLL) at Universiti Kebangsaan Malaysia (UKM) has a range of library instruction programmes developed with appropriate use of instructional design to impart information skills necessary for the effective use of information sources. This article attempts to give an account of the evolution of these instruction programmes at TSLL. It includes the rationale for developing appropriate instructional programmes to ensure an effective teaching of information skills.

### **ORIENTATION PROGRAMME**

This programme has been conducted since the library was established in 1970. It is still being conducted at the beginning of the first semester for new students. From 1982 to 1984, the programme involved a slide tape presentation of the library and a library tour. During these years, efforts were made to introduce basic reference sources during the orientation week programme. However, the idea was totally abandoned because the orientation environment was found to be not conducive to effectively impart

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substantial information. From 1985 onwards, an overview of the library facilities and services was presented more interestingly through a video programme.

In 1993, new students had to view an additional 15 minutes video programme entitled *Library Rules* which was felt necessary to curb the improper utilisation of library facilities. The programme was well received by students since it was a documentary drama peppered with comical scenes. With the launching of Online Public Access Catalogue (OPAC), additional instruction sessions on the use of OPAC was introduced after the orientation week.

The orientation programme at TSLL has been occasionally reviewed to adapt to current technological changes in the library system and to meet the needs of students to acquire information skills. Prior to 1996, the library orientation programme at TSLL involved a half hour video presentation and a library tour to familiarise users with the physical arrangement of the library, its services and its policies. The weekly OPAC sessions were conducted on Wednesday afternoons and Saturday mornings throughout the first month of each new session and involved every librarian. However, from July 1996, library tours were conducted by senior students who introduced groups of new students to library facilities and services. It is too early to ascertain the effectiveness of this new innovation.

### **BIBLIOGRAPHIC INSTRUCTION**

As the volume of available information grows and users demand gets more complex and diversified, a formalised type of instruction for groups of an increasing number of students are organised each year.

In the eighties, the average number of groups requesting for bibliographic instruction sessions was less than 10 per year. By 1994, the number increased to 38 (Table 1). The increase can be attributed to an additional reference librarian, appointed in late 1992.

Table 1 : Bibliographic Instruction Between 1985 and 1994

<b>Year</b>	<b>No. of Classes</b>
Mid '85 - Mid '86	7
Mid '86 - Mid '87	26
Mid '87 - Mid '88	15
Mid '88 - Mid '89	10
Mid '89 - Mid '90	9
Mid '90 - Mid '91	12
Mid '91 - Mid '92	10
Mid '92 - Mid '93	10
Mid '93 - Mid '94	38

The other contributing factor was the changes made to the modules of bibliographic instruction programmes. After years of constant evaluation on a number of library instruction programmes, TSLL has managed to design 6 basic instruction programmes. These include

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the *Tanggaton Tun Seri Lanang*; an information search programme using the problem solving approach; a workshop on library search; Tun Seri Lanang Clinic; the “business hunt” programme and the marketing of bibliographic instruction programme.

#### **TANGGATON TUN SERI LANANG**

This programme is designed to introduce undergraduates to the reference and information sources available within their field and the strategy for searching information effectively. The module consists of a one hour lecture on the sources of information and how these sources can assist students in their studies. The second part of the lecture explains in depth the strategy for finding information by using a structured pathfinder, *Tanggaton Tun Seri Lanang* (Figure 1). Another half hour is devoted to CD-ROM demonstrations. It is only during this session that students get exposed for the first time to CD-ROM search. The practical part is conducted within the next two hours after the lecture by using *Tanggaton* as a guide.

*Tanggaton* has been designed to enable students obtain experience in acquiring library skills by going through all the steps in the pathfinder. It is felt that ample time should be given to student to master the information search skills as it cannot be acquired within a day. Students are given about 1 to 2 weeks to complete the task using *Tanggaton* after which they should be able to search for information using the OPAC, reference sources, bibliographies, indexes and

abstracts, CD-ROM and databases to locate conference papers, local journals and graduation exercises.

*Tanggaton* is an informal instruction method. Students are advised to refer to the reference librarian each time they face problems. This enable students to learn at their own pace and receive a one-to-one instruction when it is needed. The more advanced students could concentrate on learning how to retrieve information from other type of sources available in the library. Their answer scripts consist of a list of relevant references they have found on their chosen topic and the sources they have referred to.

*Tanggaton* was initially tested among TESL (Teaching English as Second Language) students in 1992. More than 10 groups of students have gone through the programme and their general comments being “*Tanggaton* is quite tiring but it gives the researcher the chance to explore every inch of Tun Seri Lanang Library. It is a very effective assignment in getting students to know the process involved in library research”.

*Tanggaton* has been integrated into courses such as research methodology and scientific writing. The Faculty of Life Sciences has in principle, incorporated *Tanggaton* as an important component of the scientific writing course and third year students from all departments under the faculty are required to attend the whole module of the *Tanggaton* programme.

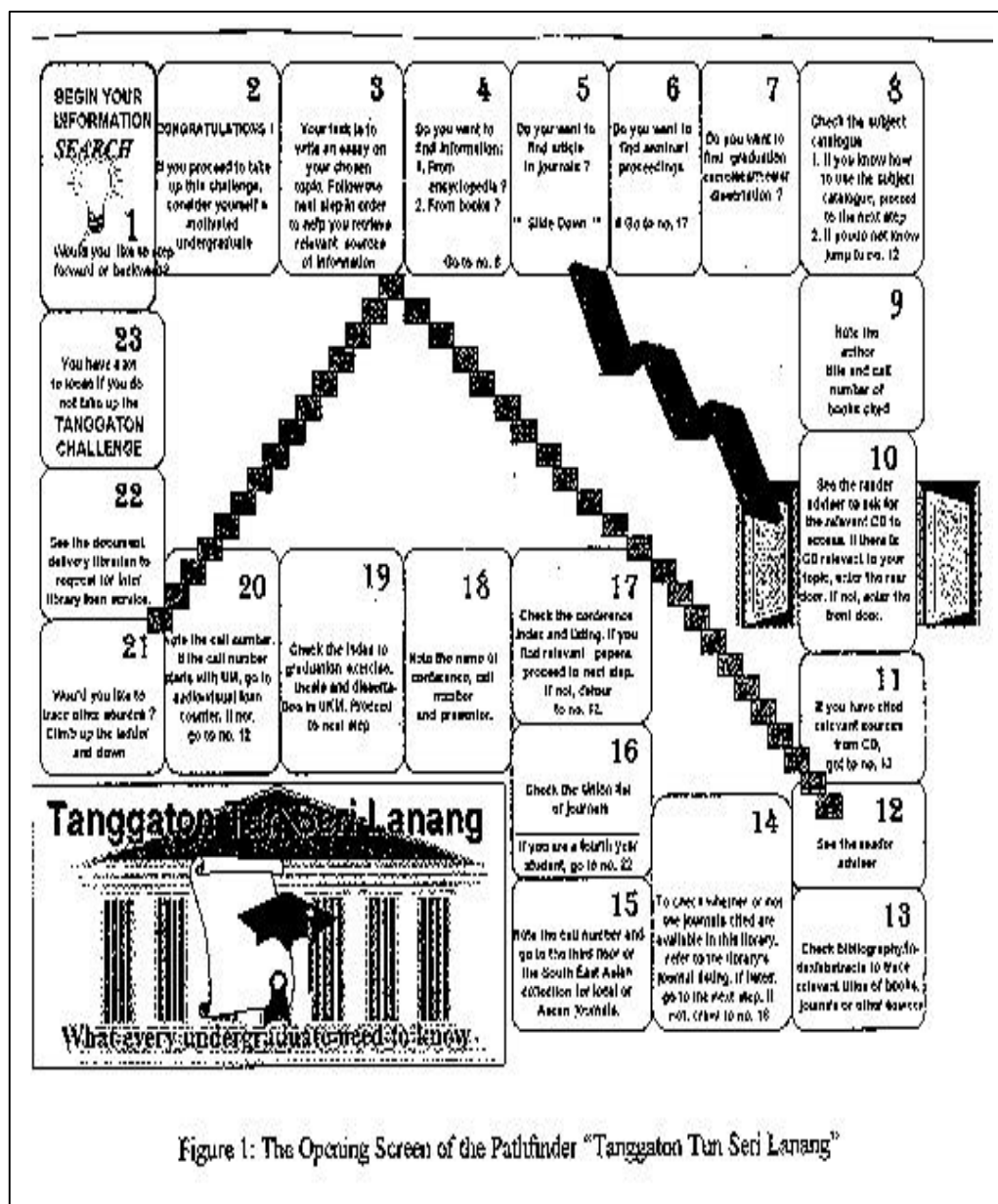


Figure 1: The Opening Screen of the Pathfinder "Tanggaton Tun Seri Lanang"

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### **INFORMATION SEARCH PROCESS : THE PROBLEM SOLVING APPROACH**

As mentioned earlier, librarians who are involved in user education programmes need to be aware of different teaching methods and educational theories. Presently, the emphasis is on skill based training and integrating reflective and critical thinking in user education.

As a result a different approach was needed when conducting user education programmes for certain groups of students. Several research studies have been conducted to gauge whether the methods used was successful in ensuring that students have mastered basic library skills. The problem solving approach was implemented on a group of Diploma of Education students. The students were made to attend the *Tanggaton* programme to acquire information searching skills needed to solve problems relating to teaching and learning. This assignment was introduced jointly by a lecturer of the Faculty of Education and the Reference and Instruction Librarian.

The problem solving approach used the Beyer's Model of problem solving which required students to accomplish the following steps (Beyer, 1988):

1. Problem (topic) statement
2. Problem identification
3. Plan/Strategy
4. Implementation plan
5. State result
6. Review result

At every step, students were encouraged to think critically and reflect upon their

action. The assignment took the form of a research diary. The objective for the assignment was threefold. First, to make students realise that the library forms an integral part of their learning process. Second, to provide students with structured opportunity to reflect on actions taken at every step (including what they personally feel). Third, to encourage and train students to think critically as they go through each step so that they become familiar with the whole information searching process and can apply the same strategy in solving real problems.

The preliminary study (Table 2) showed that students did face difficulties in following all the six steps in Beyer's model of problem-solving. Thirteen out of sixteen students managed to retrieve sufficient information. The students expressed the opinion that the problem-solving approach has helped them in gathering sufficient relevant information. However, 4 students faced difficulty at one of the 6 steps and 5 had difficulty at 2 of the 6 steps.

Table 3, shows how students integrated critical and reflective thinking as they went through each step to search for relevant information. Thirteen students made efforts to think, modify and remodel their search strategies, and succeeded in gathering relevant information to solve the problems given. A sample of strategies adopted at the 6 steps would help to explain the problem solving processes that the student went through.

Table 2 : Steps Undertaken by Students in Acquiring Information as a Means of Problem Solving

Students	Steps in Beyer's Model					
	1	2	3	4	5	6
9	/	/	/	/	/	/
15	/	/	/	/	/	/
4	/	x	/	/	/	/
7	/	x	/	/	/	/
14	/	x	/	/	/	/
16	/	x	/	/	/	/
1	/	x	x	/	/	/
3	/	/	x	/	/	x
6	/	x	/	/	/	x
10	/	x	x	/	/	/
2	/	x	x	/	x	/
5	/	x	/	/	x	x
8	/	x	/	/	x	/
11	/	x	/	/	x	x
12	/	x	x	x	x	x
13	/	x	x	x	x	x

/ - Steps where students have no problem      x - Steps where student encountered problems

**Sample of the Six Steps in Bayer's Model**

Step I: Problem statement. State one problem in the teaching and learning of chemistry.

Questions that students would ask:

- Do I understand the question?
- What do I need to find out?
- What is my reaction after reading the question?

Step II: Identify the problem.

- Why do some students lack interests in chemistry?

Questions that students would ask:

- What do I need to do to solve the problem?

- What are the factors that caused the lack of interest?
- What is my reaction and feeling in trying to solve the problem?
- Do I understand the problem?

Step III: Plan search strategy

Students are required to plan their search strategy in order to find the relevant information to solve given problems.

Such plans could include: discussion with friends about the topic, finding information from the library, reading sources collected, reflecting and analysing information. Questions that students would ask are:

- What are the sources of information?
- Where do I begin to search?
- How would I find information?

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- Who can I ask in the library?
- What is my reaction and feeling before and after doing the strategic plan?
- Do I need to make changes to my initial plan?

It is at this stage that students may find *Tanggaton* as a useful pathfinder.

Step IV: Execute plan.

Students are required to write a full account of whatever steps taken in executing their strategic plan as in Step III. Here, students are encouraged to reflect on their initial plan and ask the following question:

- Do I understand the problem?
- Are the information sources found, relevant/sufficient?
- What is lacking and what do I need to find out further?

Students are encouraged to reflect on the strategy and modify where necessary to improve on the strategy.

- What do I need to refer to?
- Do I search the CD-ROM again or should I try an alternative search strategy?
- How do I feel about the strategy?

Step V: State results.

Students are required to state clearly: The solutions to the problems in teaching and learning of chemistry from the sources read and analysed.

- How was the problem solved by the sources of information found?
- How do I feel? Do I feel apprehensive or uncertain about the answers obtained?

- Are the facts gathered sufficient?

Step VI: Review result

At this final stage, a student should be able to identify the approaches and methods of research undertaken pertaining to the problem to be solved. It is at this point that students enclosed a list of references they have obtained. Students are required to express their feelings as the whole information search process comes to an end.

The problem solving process was aimed at making students realise that evaluating divergent views during the research process is essential to developing a well-supported stance. Students learned to understand the importance of the context of information, the sources of information, the reading process, analyses of information and the use of information for intended audience.

The problem solving approach is a shift from the traditional tool-oriented bibliographic instruction to a more meaningful way of imparting information skills. Students are more motivated to go through the search process as they could clearly see what is expected of them. This approach indicated the difference between merely requiring the students to give a list of references on a certain topic and gathering information through the more challenging problem-solving approach.

This approach also required students to express their actions and feelings (Table 3). This enabled the research team to study the stages of feelings and thoughts that accompany the actions and strategies that students go through in completing their



research assignment. Considering the cognitive and affective aspects of students' search process helped librarians adapt their instruction at each stage of the process. This study found that there were similarities to the stages of feelings and thoughts which accompanied students action as proposed in Kuhlthau's model (Bodi, 1992). This model identifies 6 stages of feelings which accompanied the information searching process.

#### **The Six Stages of Feelings Which Accompany Information Searching Process**

Stage1: Starting the assignment brings feeling of apprehension and uncertainty about the task to be completed.

Stage 2: Selecting a topic or starting the problem causes feeling of confusion. However, there is a brief feeling of elation after the students has decided on their topic.

Stage 3: Exploring information brings feelings of uncertainty and threat. Bibliographic instruction can be most effective in curbing such feelings.

Stage 4: At this stage, students are expected to focus on identifying the facets of the problem and its solution. When students succeed they feel optimistic and confident.

Stage 5: At this stage, students realise that the process of information search is an extensive task. Some students become more confident and get interested in the research process. Some feel it necessary

to get individual instruction as it appeared to be more effective then.

Stage 6: As students come to presenting their final report, they feel very much relieved and satisfied. On the other hand, students who have not gone through or understood the whole problem solving process did not achieve the desired goal. Hence, feelings of disappointment may prevail.

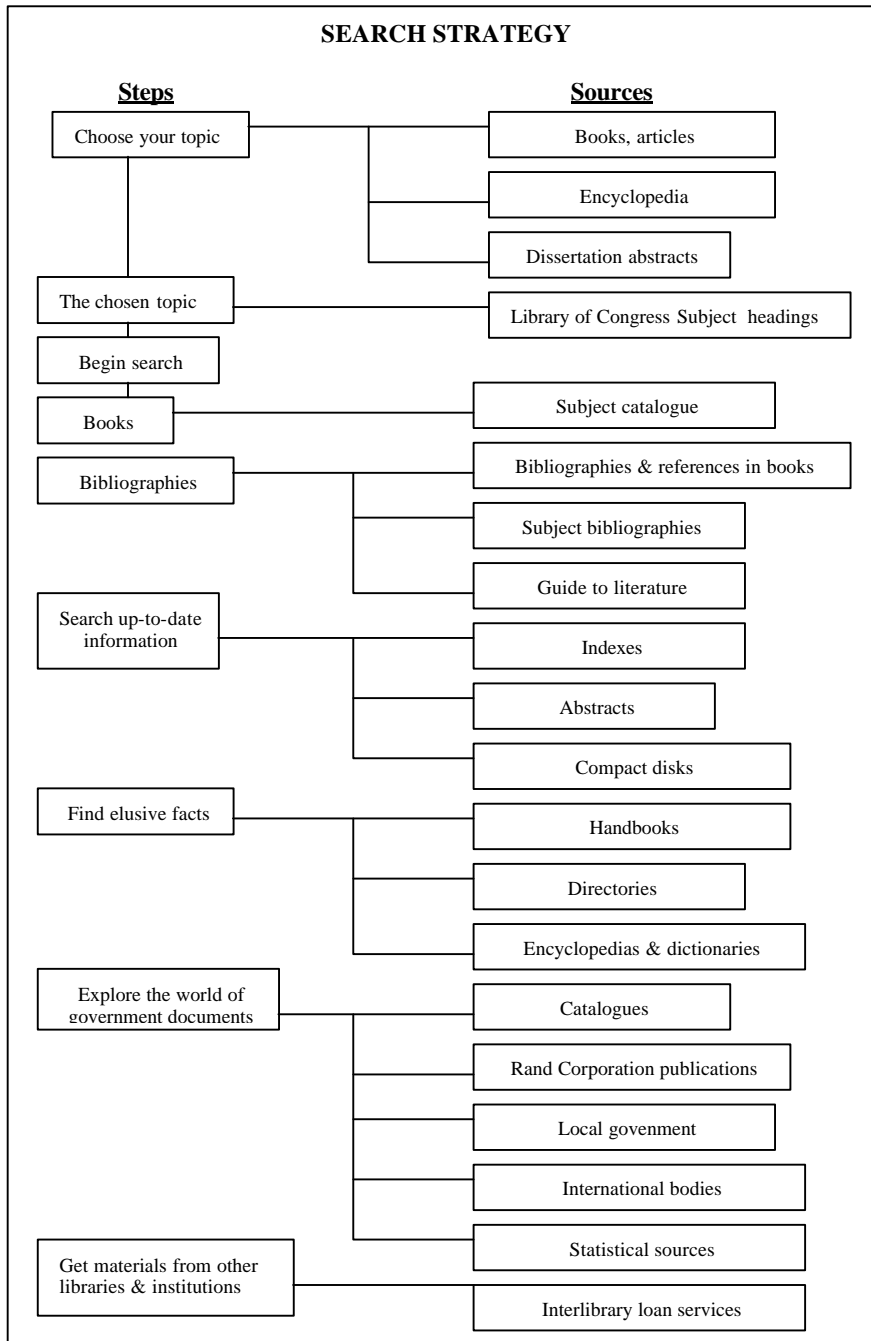
#### **WORKSHOP ON LIBRARY SEARCH**

This workshop, better known as 'Library Search' is a component of the Research Methodology course organized by the Public Services Department Malaysia in cooperation with the UKM Training Division. It has proven to be a popular programme for post graduate students. Initially the programme was designed for SLAB (Training Scheme for Bumiputra Academics) participants consisting of lecturers and tutors from local universities who plan to do further studies abroad.

The objective of this workshop is to expose participants to the systematic approach to searching information for the preparation for thesis or dissertation. The workshop involves 2 hours of lecture on sources of information and systematic information search strategy. The lecture is made more interesting by using graphic software instead of transparencies. The instructional design focused on the search strategy (Figure 2).

To ensure a better understanding of the lecture, a practical session was conducted

Figure 2 : Search Strategy Adopted for the Workshop on Library Search



immediately afterwards. Participants were made to refer to appropriate indexes, abstracts and CD-ROM databases and to practise doing truncated searches using Boolean logic from OPAC. Efforts were made to move away from a tool-oriented instruction. Participants have been taught the principal approaches rather than merely giving titles of appropriate reference sources. Some of the key points emphasized in the lecture are:

- How to choose topic?
- How to identify keywords and related subject headings?
- What are the previous researches done?
- Is there a bibliography on the research topic?
- How to retrieve up-to-date information?
- Are there any conference documents, patents, government documents available?
- What do I need to do when relevant sources are not available in the library?
- How do I locate elusive facts?

The rest of the morning was allocated for practical work. In the afternoon, participants were given demonstration and hands-on experience on CDROM search. The workshop is a one day affair of which two-third of the time allocated was taken up by practical and hands-on session. This approach was well received by participants.

#### **TUN SERI LANANG CLINIC**

In academic libraries a clinic often refers to bibliographic instruction sessions aimed at teaching information skills.

However, the 'Clinic' in TSSL context was actually initiated for graduate students who have problems in tracing materials for thesis/dissertation preparation. This clinic caters for students who have not gone through any bibliographic instruction session but desperately need intensive guidance. Such guidance could not be handled at the reference desk. The clinic operates every Wednesday afternoon between 2 to 4 p.m. Students have to make prior appointment. On the first appointment, the reference librarian would interview the student and fill in the registration form consisting of the student's profile.

This procedure allows the reference librarian to know each student's needs better and to guide them on the use of appropriate search strategies and sources. Guidance are given on how to identify relevant keywords when searching CD-ROM, indexes and abstracts. After such exposure, the student would proceed on their own with the suggested search strategy and sources recommended. Every student who registers at the "clinic" is expected to make a second appointment. This enables the reference librarian to get some feedback as to the effectiveness of the one-to-one instruction given and to monitor the rate of success in the provision of professional advice and guidance. Very often, such feedback is not possible for enquiries handled at the reference desk. Since the Clinic started, about six students have had assistance and guidance. Success rate was almost 99% since most students managed to compile relevant information for their research.

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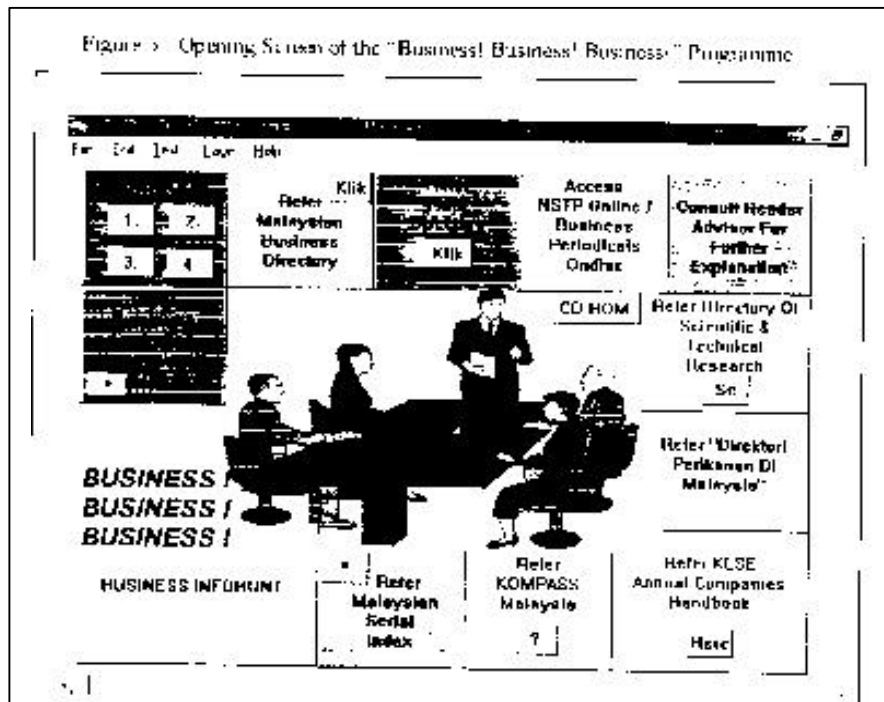
### THE 'BUSINESS HUNT'

In keeping up with the time, librarians are using the latest technology products in providing information services. TSLL is one of those libraries that showed clear intentions of adopting the latest technology. In 1995, for the first time, multimedia was used to impart bibliographic instruction with the aim of making presentation appealing. Using the AUTHORWARE software an interesting game called 'Business! Business! Business!' was created to motivate students to acquire information skills in business (Figure 3)

This game was introduced as a competition in conjunction with a library exhibition on Business Administration. It ex-posed student to business information sources such as:

- KOMPASS Malaysia*
- KLSE Annual Companies Handbook*
- Directori Perikanan Malaysia*
- [Fisheries Directory of Malaysia]*
- Federation of Malaysian Manufacturers Directory*
- New Straits Time Press Online*
- Indeks Majalah Malaysia [Index to Malaysian Periodicals]*

Figure 3: Opening Screen of the "Business! Business! Business!" Programme



Although, there is still much room for improvement, this game paves the way to make learning information skills an interesting affair.

### **MARKETING BIBLIOGRAPHIC INSTRUCTION**

All the programmes mentioned earlier are still being conducted and developed. Marketing strategies taken to reach people on campus include:

- Library exhibition on library use skills together with exhibits on library services, facilities and user education programmes.
- Publication of articles on *Tanggaton*, *Clinic Tun Seri Lanang* and some other programmes in newsletters.
- Brochures, flyers.
- Information hunt.
- Through involvement of faculty members.
- Enclosure of handouts in orientation brochures.
- Involvement of students, graduates, lecturers who had attended the programmes.
- Announcements at library committee and faculty meetings.
- Through *Nadi Bangi* (students' newspaper).

Besides these publicity programmes, a more proactive approach was undertaken. Various faculty prospectuses were scanned to identify courses that would need bibliographic instruction. Such courses include research methodology, scientific writing/reporting, business writing, communication skills, seminar presentation and business communication.

Faculty members concerned were contacted and briefed about possible integration of user education programme into the course they would be conducting within the semester. As a result, 15 classes were organized. Both students and faculty members evaluated the user education programme as very useful and even requested that such programmes be continued in future.

### **CONCLUSION**

The User education programmes in TSSL have evolved through the years. What is considered effective now may not be suitable in the years to come. One way of sustaining relevance and effectiveness of user education programmes is by involving students and faculty members. Concurrently, libraries need to keep pace with the state-of-the-art instructional designs. Quality instruction should be emphasised and presented in an interesting manner. The promotion of programmes should be a proactive and continuous task.

TSSL has so far, managed to triple the number of classes conducted since the late 1980s. Before 1993, only one librarian was given the responsibility of managing and conducting user education programmes. The marked increase in the number of classes between 1993/94 (Table 1) may be due to an additional librarian posted as reference and bibliographic librarian and the promotional efforts undertaken. There is also a marked increase of subject specialist librarians involved in giving user education programmes. In 1993,

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two librarians from the Arabic and Islamic Civilisation Collection began to conduct user education classes incorporating *Tanggaton* in the classes. Since then, more than ten groups of students from the Islamic Studies Faculty attended the bibliographic instruction session. The Law Librarian has also begun to conduct bibliographic instruction to law students. Ideally students from the other disciplines should also benefit from such programmes. Once such programmes are recognised as important by faculty members, it is good publicity in itself and this would ensure its continuity in the near future.

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Searching information				Reflective thinking process while searching for information							
Thinking Steps	Sources			Feeling		Thinking		Feeling			
	CD-Rom	Catalogue	Other Sources	Weary	Not Weary	Find Journal	Find other sources	Relieved	Less weary	Weary	
1	Used Tanggaton: - with assistance from librarian	4	4	3	11	-	4	4	4	7	
	- without assistance from librarian	2			2	-	2			2	
2	Did not use Tanggaton :										
	- search CD Rom	2			2						2
	- own method	1			1		1		1		

Table 3 : The Six Steps of Beyer's Model: Executive Plan