

Library Anxiety and Library Use: A Survey at Jinwen University of Science and Technology

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【Abstract】

This study aims to explore the relationships between library anxiety and library use and outline the characteristics of library-anxious students at Jinwen University of Science and Technology. A questionnaire is used for data collection in this study. There are two parts in the questionnaire: Part I is the Bostick's Library Anxiety Scale (1992) for assessing different levels of library anxiety, and the second part consists of 7 items of demographic information for describing the characteristics of students. This study does not find library anxiety among students at Jinwen University of Science and Technology that seriously affects library usage. It is interesting to note that while the students that are surveyed feel that they are familiar with the library's resources and its environment, they still do not feel confident that they can use the library efficiently. This is a reminder to library staff of the importance of constantly promoting user education and encouraging students to better utilize their institution's library. The results of this study will help library staff to decide on the most effective ways to provide custom-made and user-oriented services for students with different needs and of different backgrounds.

Keyword

Library anxiety ; Library use ; Library anxiety scale

Introduction

Motivation and Purpose

Line (1963, p.100) commented that “there is a general impression that students use libraries far less than they ought to”. Most library staff shares this sentiment, and the use of the library is an issue that is of constant concern to them.

In 2005, a survey was conducted in Jinwen University of Science and Technology (JUST) on the frequency and preference of the usage of the resources, facilities and services in its library. (王秀惠、于第, 2005) That study found that the vast majority of students rarely use JUST’s library resources and facilities, and that seven percent of students had never visited the library.

Why don’t college students like to visit and use their institution’s library? The reasons are many. For example, the infrequent users of Michigan State University Library stated that their library use was irrelevant to their coursework, it was too complex and the location was inconvenient, etc. (Link, 1985) However, some librarians and library educators point out that the prevalence of library anxiety among college students has existed for decades. (Jiao & Onwuegbuzie, 1999) In addition, library-anxious students typically make the least use of the library (Jiao & Onwuegbuzie, 1997). Therefore, it is important to further explore the relationships between library anxiety and library use and to determine the characteristics of library-anxious students.

In order to explore the issue of library anxiety, this study used a questionnaire to survey the students of JUST to find the answer to the following

questions.

1. What are the characteristics of library-anxious students?
2. What are the different levels of library anxiety among students?
3. Are there significant relationships between library anxiety and different characteristics of students?
4. Are there significant relationships between frequency of library use and different characteristics of students?
5. What are the relationships between library anxiety and the frequency of library use?

Background Information on Jinwen University of Science and Technology

The Jinwen University of Science and Technology was originally established as Jin-Wen College in 1980. In 1988 it was reorganized and renamed the Jin-Wen Institute of Technology. In February, 2007, it was upgraded to a university level of institution and was renamed the Jinwen University of Science and Technology. The four academic colleges of the university cover 16 undergraduate academic departments and 2 institutes. It is a medium-sized technological university with of around 9,700 students. (About 5,400 of them attend regular day-time programs, about 2,600 attend evening classes, and another 1,700 students attend the week-end classes).

Literature Review

The term *library anxiety* was first coined by Constance A. Mellon in 1986. Library anxiety refers to an uncomfortable feeling or emotion that is

experienced when utilizing a library or contemplating using it. These feelings of anxiety stem from the following four factors: (1) the size of the library; (2) a lack of knowledge about where things are located; (3) how to begin, and (4) what to do (Mellon, 1986). In general terms, library anxiety is an uncomfortable feeling experienced in a library setting, which has cognitive, affective, physiological, and behavioral ramifications. It is characterized by ruminations, feelings of tension, fear, uncertainty and helplessness, negative thoughts, and mental disorganization, all of which are debilitating to one's information literacy (Jiao, Onwuegbuzie, & Lichtenstein, 1996). In a more concise manner, 陳書梅(2006) defined library anxiety as a kind of anxious emotion that stems from an uncomfortable feeling or emotional situation when users are using a library.

library anxiety: barriers with staff, affective barriers, comfort with the library, knowledge of the library, and mechanical barriers. Barriers with staff refers to a student's perception that librarians and other library staff are intimidating and aloof, as well as the extent to which librarians are perceived as being too busy to assist students. Affective barriers measures students' feelings of inadequacy about using the library. Comfort with library deals with student's feelings about how safe, welcoming, and non-threatening the library is. Knowledge of the library refers to how familiar students feel they are with the library. Finally, mechanical barriers are concerned with feelings that emerge as a result of students' reliance on mechanical library equipments. After the publication of Bostick's study, some other studies identified various components of library anxiety as well (see Table 1).

Bostick (1992) identified five components of

Table 1
Summary of the components of library anxiety from different studies

<i>Study</i>	<i>Components</i>
Onwuegbuzie (1997)	(1) interpersonal anxiety; (2) perceived library competence; (3) perceived comfort with the library; (4) location anxiety; (5) mechanical anxiety; (6) resource anxiety.
鍾思瑩 (1998)	(1) positive perception of library; (2) negative perception of library; (3) library services.
Shoham & Mizrachi (2001)	(1) staff; (2) knowledge; (3) language;

(Continued)

<i>Study</i>	<i>Components</i>
	(4) physical comfort; (5) library computer comfort; (6) library policies/hours; (7) resources.
Anwar, Al-Kandari, and Al-Qallaf (2004)	(1) staff approachability; (2) feelings of inadequacy; (3) library confidence; (4) library constraints.

Based on the above-mentioned studies, library anxiety has been found to be a multi-dimensional construct of psychological feelings and physical experiences regarding both software (i.e. staff, services, and atmosphere) and hardware (i.e. resources, facilities, and environment) of the library when users are using it realistically.

Since a library provides services to meet the information needs of users with a wide variety of preferences, backgrounds, styles, and expectations, Onwuegbuzie, Jiao and Bostick (2004) commented that the theory of library anxiety can be extended by collecting data from different library environments and be applicable to different types of libraries, including school libraries, public libraries, special libraries, and academic libraries, in any country. Therefore, this study reviewed five previous studies on library anxiety of college students in different countries, including the USA, Israel, and Taiwan, in order to gather and investigate more viewpoints and comments from different cultures and different environments.

Is there a significant relationship between library anxiety and the various characteristics of the students? Table 2 compares the findings of the five

studies that investigated provide different findings and results. For example, both Shoham & Mizrachi (2001) and 黃于倩(2005) found that female students tend to be more anxious. On the other hand, in the study of Jiao et al. (1996), men showed a higher level of library anxiety than women while 鍾思瑩(1998) concluded that there is no significant difference between male and female students in the level of library anxiety. 鍾思瑩 also found students majoring in social sciences at Chengchi University showed the highest level of library anxiety. 黃于倩 concluded that students majoring in liberal arts were more anxious than other students in Chunghsing University. The study of Jiao et al. (1996) revealed that students with part-time jobs had a higher level of library anxiety than those students without part-time jobs.

Although these five studies showed some different findings and results, these studies had two factors in common:

1. Freshman or sophomore show a higher level of library anxiety than junior and senior.
2. Those students who have attended a library instruction program or activity show a lower level of library anxiety.

In general, library anxiety varies significantly

with certain characteristics according to the above-mentioned studies. While there are some commonalities, there are just as many contradictions in the identified characteristics. Jiao et al. (1996)

reminds both librarians and teaching faculty that they should be aware of the characteristics of highly-anxious students, and increase the availability of anxiety-reducing interventions for students.

Table 2

Summary of findings from different studies in relationships between library anxiety and characteristics of students

Studies	Characteristics of Students				
	Gender	Academic college	Class level	Employment status	Experience of library instruction
Jiao et al. (1996)	men more anxious	N/A	linear decline from freshmen to seniors	with part-time job more anxious	N/A
鍾思瑩 (1998)	no difference	social science more anxious	lower grades more anxious	N/A	non-experienced more anxious
Shoham & Mizrachi (2001)	women more anxious	N/A	linear decline from freshmen to seniors	N/A	N/A
Van Scoyo (2003)	N/A	N/A	N/A	N/A	non-experienced more anxious
黃于倩 (2005)	women more anxious	liberal arts more anxious	freshmen more anxious	N/A	no significant difference but non-experienced a little bit more anxious

Is there any significant relationship between library use and the various characteristics of students? Although several studies have identified obvious relationships, these relationships vary and are contradictory. Jiao and Onwuegbuzie (1997) concluded that older students use libraries more frequently than do younger students, males use the

library more often than females, and students who prefer to study alone tend to utilize the library more than do students who prefer to learn in co-operative groups. This study also found that frequency of library use did not vary with respect to the year of study the student is in. This is contrary to an earlier study conducted by Gratch (1980). Grimes and

Charters (2000) found that female, African-American and on-campus students spent more time per week in the library than their male, Caucasian, and off-campus cohorts, while those with full-time jobs and recent library instruction experience spent less time. Their findings contradict the findings of Jaio and Onwuegbuzie. However, students' characteristics associated with library use vary (or even conflict) in different studies. Those characteristics might be unique to the sampled group and be influenced by other cultural, ethnic and linguistic factors. Therefore, determining the characteristics of students associated with the frequency of library usage may be helpful in redesigning library instruction programs and more efficiently promoting library resources. Nevertheless, the incoherent results from previous studies caution librarians to explore their own path as the characteristics of a student body are quite unique and inimitable to its own population.

Does student's library anxiety influence their usage of the library? While not all studies identified this relevancy, others did find that a higher anxiety correlates to less use. According to Anwar et al. (2004), the use of the library is not significantly related to library anxiety in Kuwait University. However, in the study of Jiao et al. (1996), a positive relationship was found between higher library anxiety and a lower frequency of visiting the library. The study of 鍾思瑩(1998) also showed a significant relationship between a higher frequency of library use and lower levels of library anxiety among students at National Chengchi University. In addition, Jiao and Onwuegbuzie (2002, as cited in Onwuegbuzie, Jiao, & Bostick, 2004) found that

high-anxious students were approximately 250% less likely to visit the library than low-anxious students. Thus, library-anxious students typically make less use of a library.

In conclusion, libraries in different institutions present different levels of relevancy between library anxiety and library use. It is necessary that the library management in any institution of higher education should outline the characteristics of their library-anxious students and find out the relationship between library anxiety and library use of its own. Such undertaking will help the library staff in the design of effective methods to provide custom-made and user-oriented services for all their students, regardless of their different background.

Methodology

The survey instrument used for data collection in this study is a questionnaire which is comprised of two parts. Part I is the LAS (Library Anxiety Scale) developed by Bostick (1992) for assessing different levels of library anxiety. The LAS consists of 43 statements using a Likert-type scale. The second part consists of 7 items of demographic information, including gender, school program, academic college, class level, experience of library instruction, employment status, and frequency of library use.

The LAS was translated into Chinese with minor revisions as follows. Statement 40, "the change machines are usually out of order", was modified to "the computers are usually out of order." This was done to reflect the fact that change machines are not available in JUST's library. Statement 43, "I can't find enough space in the

library to study”, was modified to “I can’t find a suitable place for me to study in the library”, due to the fact that the new JUST’s library building offers ample space. Bostick reported a Cronbach’s alpha of 0.80 for her study. In the present study, the reliability of the LAS, had a Cronbach’s alpha of 0.933, indicating a very high level of internal consistency.

The content of the questionnaire was pre-tested with 30 students at JUST, and later refined according to the pre-test responses and suggestions. Questionnaires were placed on the information desk of the library lobby from April 5th to 15th of 2007. Every student who visited the library during that period of time was invited to fill out the questionnaire on a voluntary basis before she/he left the library. In total, 445 students responded, 17 of which were invalid, resulting in an overall response rate of 96%. The quantitative analysis of the questionnaire was conducted using the SPSS (Statistical Package for Social Science) and applying the following statistical analysis methods:

1. Descriptive statistics were used to profile the characteristics of the responding students.
2. T-test and one-factor analysis of variance

(ANOVA) were used to examine the significance of the differences in library anxiety for different student characteristics.

3. The mean score was used to compare the difference, in the levels of library anxiety for different student characteristics.
4. Cross tabulation and the chi-square test were used to examine the relationships between frequency of library use and different student characteristics.

Results

Characteristics of the Students

Table 3 shows the distribution of the responding students categorized by gender, school program, college, class level, experience of library instruction (whether they attended a library instruction activity or program), employment status (whether or not they held a part-time or full-time job), and frequency of library use. There is about 87% of responding students had not attended a library-instruction related activities or programs.

Table 3
Distribution of respondents by characteristics of students

	Characteristics	No. of responses	%
Gender	male	134	31.3
	female	294	68.7
School program	Regular day-time program	340	79.4
	Evening classes program	45	10.5
	Weekend classes program	43	10.0
Academic college	Tourism & Hospitality	74	17.3
	Business & Management	178	41.6
	Liberal Arts	120	28.0
	Electronics & Information	56	13.1
Class level	freshman	146	34.1
	sophomore	110	25.7
	junior	72	16.8
	senior	100	23.4
Experience of library instruction	yes	55	12.9
	no	373	87.1
Employment status	yes	238	55.6
	no	190	44.4
Frequency of library use	zero times a month	50	11.7
	once to three times a month	191	44.6
	four to seven times a month	119	27.8
	over eight times a month	68	15.9

Note: N=428

Levels of Library anxiety among Students

The overall mean score of library anxiety among students is 2.42, as shown in Table 4. According to the proposed levels of library anxiety by Anwar et al.(2004), the mean score of 2.42 drops on the low level of anxiety ranging from 2.22 to 2.65. When looking at the mean score of each dimension of

library anxiety, the item affecting students most is the mechanical barriers (2.66), and the second one is affective barriers (2.54). Knowledge of the library shows a relatively low mean of 2.20. Evidently, this study has gathered a sample of users with no obvious psychological barriers and more concerned with issues related to the physical part of the facility.

Table 4
Comparison of the level of library anxiety in five dimensions

Dimension	Mean
Barriers with staff	2.33
Affective Barriers	2.54
Comfort with the library	2.37
Knowledge of the library	2.20
Mechanical barriers	2.66
Average	2.42

Relationship between Library Anxiety and the Characteristics of the Responding Students

As shown in Table 5, the T-test results indicate that there are statistically significant differences between male and female students regarding Barriers

with staff, affective barriers and mechanical barriers. In JUST, it appears that females have a higher level of library anxiety. This finding is similar to the studies conducted by Shoham & Mizrachi (2001) and 黃于倩(2005).

Table 5
T-test of the differences in library anxiety between male and female students

Dimension	Mean		T-value	Sig.
	Male	Female		
Barriers with staff	2.25	2.37	-2.240	0.026*
Affective barriers	2.42	2.59	-1.149	0.001**
Comfort with the library	2.33	2.38	-0.948	0.251
Knowledge of the library	2.16	2.22	-3.307	0.344
Mechanical barriers	2.54	2.72	-3.254	0.003**

Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Table 6 shows different programs with significant different level of affective barriers and comfort with the library. Students who attended the evening classes program scored higher in library anxiety than those who attend the weekend classes

and regular day-time programs. This might be related to the fact that the evening classes program allows the least amount of between-class time for students to visit the library, resulting in a high level of unfamiliarity with the JUST library.

Table 6

ANOVA of the differences in five dimensions of library anxiety among Regular day-time program, Evening classes program and Weekend classes program students

Dimension	Mean			F-value	Sig.
	D	E	W		
Barriers with staff	2.31	2.45	2.36	1.323	0.268
Affective barriers	2.49	2.77	2.66	8.521	0.000***
Comfort with the library	2.35	2.53	2.33	3.072	0.047*
Knowledge of the library	2.17	2.29	2.30	1.563	0.211
Mechanical barriers	2.65	2.70	2.72	0.352	0.704

Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

D=Regular day-time program; E=Evening classes program; W=Weekend classes program

Table 7 shows how different academic disciplines differ on Barriers with staff, Comfort with the library and Mechanical barriers. Liberal Arts students had a higher level of library anxiety in the dimensions of Barriers with staff and Mechanical barriers. Business & Management, Liberal Arts, and Tourism & Hospitality students all showed a higher

level of library anxiety than students of the Electronics & Information College in the dimension of Affective barriers. Compared to the other three academic colleges, students of the Electronics & Information College scored the least library anxiety in all dimensions.

Table 7

ANOVA of the differences in library anxiety among Tourism & Hospitality, Business & Management, Liberal Arts and Electronics & Information college students

Dimension	Mean				F-value	Sig.
	T	B	L	E		
Barriers with staff	2.35	2.34	2.42	2.10	4.953	0.002**
Affective barriers	2.54	2.59	2.56	2.31	5.103	0.002**
Comfort with the library	2.34	2.41	2.37	2.26	1.406	0.240
Knowledge of the library	2.17	2.24	2.23	2.05	1.943	0.122
Mechanical barriers	2.64	2.69	2.76	2.39	5.724	0.001**

Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

T=Tourism & Hospitality college; B=Business & Management college; L=Liberal Arts college; E=Electronics & Information college

Table 8 indicates that there are significant differences regarding Barriers with staff and Affective barriers among freshmen, sophomores, juniors and seniors. Freshmen show the highest levels of library anxiety with respect to all five of dimensions of library anxiety. This finding is similar to those previous researches reviewed in this study. However, it is surprising that seniors score more library anxiety than do sophomores and juniors in the dimensions of Comfort with the library and

Knowledge of the library. The researcher surmises that the higher level of anxiety found in seniors is related to the timing of the opening of JUST's new library two years ago. In retrospect, most of the library education programs and efforts of the last two years have been focused primarily on freshmen each year and the current seniors were sophomores when the new library started. This hypothesis coincides with the finding in the next paragraph.

Table 8
ANOVA of the differences in library anxiety among freshmen, sophomores, juniors and seniors

Dimension	Mean				F-value	Sig.
	Freshmen	Sophomores	Juniors	Seniors		
Barriers with staff	2.43	2.31	2.30	2.22	2.876	0.036*
Affective barriers	2.63	2.54	2.39	2.50	4.120	0.007**
Comfort with the library	2.42	2.32	2.31	2.37	1.108	0.345
Knowledge of the library	2.29	2.12	2.13	2.19	2.383	0.069
Mechanical barriers	2.75	2.66	2.63	2.54	2.297	0.077

Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

According to the mean figures shown in Table 9, students without the experience of having attended a library instruction program have higher levels of library anxiety than those who did. This finding also is similar to the previous researches reviewed in this study. Therefore, library instruction workshops likely

have a positive influence on reducing the levels of student anxiety in using the library.

No significant differences were found between students who have a full-time or part-time job (Table 10). This finding is different from the study conducted by Jiao, et al. (1996).

Table 9

T-test of the differences in library anxiety by experience of library instruction

Dimension	Mean		T-value	Sig.
	Yes	No		
Barriers with staff	2.3248	2.3382	-0.174	0.862
Affective Barriers	2.3394	2.5708	-3.298	0.001**
Comfort with the library	2.3500	2.3733	-0.331	0.741
Knowledge of the library	2.1968	2.2509	-0.668	0.505
Mechanical barriers	2.6303	2.6720	-0.500	0.618

Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Table 10

T-test of the differences in library anxiety by employment status

Dimension	Mean		t-value	Sig.
	Yes	No		
Barriers with staff	2.3440	2.3270	0.330	0.742
Affective Barriers	2.5679	2.5075	0.670	0.503
Comfort with the library	2.3845	2.3526	-0.640	0.523
Knowledge of the library	2.1882	2.2232	-1.112	0.911
Mechanical barriers	2.6639	2.6702	1.266	0.206

Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Relationship between Frequency of Library Use and the Characteristics of the Responding Students

The figures of Tables 11-16 show the results of examining the differences between the various

characteristics of students and their frequency of library use. The findings are as follows:

- 1.No significant relationship is found between frequency of library use and difference in genders (Table 11).

Table 11

Cross tabulation and chi-square test of the relationship between frequency of library use and different genders

	1		2		3		4		Total (N)	X ²	Sig.
	N	%	N	%	N	%	N	%			
Male	15	11.2	64	47.8	27	20.1	28	20.9	134	7.659	0.54
Female	35	11.9	127	43.2	92	31.3	40	13.6	294		

Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

1=zero times a month; 2=once to three times a month; 3=four to seven times a month; 4=over eight times a month

2. Students who attend the Regular day-time program use the library more frequent than those

who attend the evening or week-end classes programs (Table 12).

Table 12

Cross tabulation and chi-square test of the relationship between frequency of library use and different school programs

	1		2		3		4		Total (N)	X ²	Sig.
	N	%	N	%	N	%	N	%			
D	17	5.0	152	44.7	105	30.9	66	19.4	340	84.655	0.000***
E	19	42.2	19	42.2	5	11.1	2	4.5	45		
W	14	32.6	20	46.5	9	20.9	0	0.0	43		

Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

1=zero times a month; 2=once to three times a month; 3=four to seven times a month; 4=over eight times a month

D=Regular day-time program; E=Evening classes program; W=Weekend classes program

3. There are significant differences of frequency of library use between different academic disciplines. Electronics & Information students and Liberal Arts students use the library more

frequently than those who study Tourism & Hospitality or Business & Management (Table 13).

Table 13

Cross tabulation and chi-square test of the relationship between frequency of library use and different colleges

	1		2		3		4		Total (N)	X ²	Sig.
	N	%	N	%	N	%	N	%			
T	6	8.1	42	56.7	20	27.1	6	8.1	74	23.197	0.006**
B	33	18.5	75	42.1	43	24.2	27	15.2	178		
L	9	7.5	48	40.0	40	33.3	23	19.2	120		
E	2	3.6	26	46.4	16	28.6	12	21.4	56		

Note: *p<0.05; **p<0.01; ***p<0.001

1=zero times a month; 2=once to three times a month; 3=four to seven times a month;4=over eight times a month

T=Tourism & Hospitality college; B=Business & Management college; L=Liberal Arts college; E=Electronics & Information college

4. There are significant relationships between frequency of library use and different class levels (Table 14). Obviously, freshmen are the group who use the library the least. Compared to freshmen and seniors, juniors and sophomores

tend to use the library more frequently. This is especially true for junior students, 26.4% of whom use the library on average over eight times a month.

Table 14

Cross tabulation and chi-square test of the relationship between frequency of library use and different class levels

	1		2		3		4		Total (N)	X ²	Sig.
	N	%	N	%	N	%	N	%			
Freshmen	26	17.8	60	41.1	41	28.1	19	13.0	146	26.982	0.001**
Sophomores	4	3.6	61	55.5	35	31.8	10	9.1	110		
Juniors	6	8.3	29	40.3	18	25.0	19	26.4	72		
Seniors	14	14.0	41	41.0	25	25.0	20	20.0	100		

Note: *p<0.05; **p<0.01; ***p<0.001

1=zero times a month; 2=once to three times a month; 3=four to seven times a month;4=over eight times a month

(5) Frequency of library use shows no significant relationships to whether students have attended a library instruction program or not (Table 15).

Table 15

Cross tabulation and chi-square test of the relationship between frequency of library use and experience of library instruction

	1		2		3		4		Total (N)	X ²	Sig.
	N	%	N	%	N	%	N	%			
Yes	4	7.3	25	45.5	17	30.9	9	16.3	55	1.288	0.732
No	46	12.3	166	44.5	102	27.4	59	15.8	373		

Note: 1. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

2.1=zero times a month; 2=once to three times a month; 3=four to seven times a month;

4=over eight times a month

(6) Students with part-time or full-time jobs show less frequent use of the library than full time students (Table 16).

Table 16

Cross tabulation and chi-square test of the relationship between frequency of library use and employment status

	1		2		3		4		Total (N)	X ²	Sig.
	N	%	N	%	N	%	N	%			
Yes	37	15.5	111	46.6	59	24.8	31	13.1	238	11.855	0.008*
No	13	6.8	80	42.1	60	31.6	37	19.5	190		

Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

1=zero times a month; 2=once to three times a month; 3=four to seven times a month; 4=over eight times a month

Relationship between Library Anxiety and Frequency of Library Use

In Table 17, the one-factor ANOVA results show that there are statistically significant

Differences regarding barriers with staff,

affective barriers, comfort with the library and knowledge of the library between library anxiety and frequency of library use. In addition, looking at the mean score of each dimension, it is obvious that students with a higher level of library anxiety tend to use the library less frequently.

Table 17
ANOVA of the differences between library anxiety and frequency of library use

Dimension	Mean				F-value	Sig.
	1	2	3	4		
Barriers with staff	2.53	2.38	2.27	2.17	5.703	0.001**
Affective barriers	2.79	2.59	2.47	2.31	11.376	0.000***
Comfort with the library	2.60	2.40	2.31	2.20	7.688	0.000***
Knowledge of the library	2.47	2.25	2.14	1.96	9.402	0.000***
Mechanical barriers	2.78	2.68	2.61	2.61	1.245	0.293

Note: *p<0.05; **p<0.01; ***p<0.001

1=zero times a month; 2=once to three times a month; 3=four to seven times a month;4=over eight times a month

Summary and Conclusions

This study did not find that library anxiety among students at JUST seriously affected their library usage. Nevertheless, among the five dimensions of anxiety, Mechanical barriers and Affective barriers presented a higher level of significance in library anxiety. In addition, it is worth noting that while the students felt that they were familiar with the library's resources and its environment, they were still not confident enough to utilize the library proficiently. That reminds us that it is important for library staff to continue user education and promote a better utilization of the library by the student body.

Different characteristics of students in JUST do vary in different levels and aspects of anxiety. The findings of this study are as follows:

1. Students with higher levels of library anxiety in Barriers with staff tend to be female, freshmen, and Liberal Arts students.

2. Students with higher levels of library anxiety in Affective barriers tend to be female, Business & Management students, Liberal Arts students and Tourism & Hospitality students, who study in the Evening classes program, and who never have experience in attending any activities or programs with respect to library instruction.
3. Students with higher levels of library anxiety in Comfort with the library tend to be those who attend the Evening classes program.
4. Students with higher levels of library anxiety in Mechanical barriers tend to be female, and Liberal Arts students.
5. As for the knowledge of the library, there is no significant relationship between the levels of library anxiety and different characteristics of students.
6. Freshmen show the highest levels of library anxiety in all five dimensions of library

anxiety.

7. Electronics & Information students present the lowest levels of library anxiety in all five dimensions of library anxiety.

Three of the above-mentioned findings in this study are particularly noteworthy. First, Liberal Arts college students in JUST tend to feel that the library staff are unhelpful and that the library facilities are not user-friendly. Second, the Electronics & Information college students seem to be more comfortable in using the library. Finally, students that attend evening classes seem to be more uncomfortable with using the library than full-time students.

The first two findings show the two extremes in library anxiety, and is the result of two groups of students with a very different academic nature. Electronics & Information is highly related to Information Technology (IT), while Liberal Arts has only a slight relationship with IT. This contradiction seems to indicate that users with a different level of pre-existing knowledge and experience have a different starting point for their level of comfort in using a library. Sophisticated users might require only occasional assistance on a quick and direct fashion. However, naive users might need care-taking type of assistance. The management of a library should be aware of the diversity in the needs of the library users.

The least comfortable dimension from the least comfortable population, the Liberal Arts college students, is discomfort with library staff. This suggests that librarians should be sensitive to people who approach library staff for help. Their first

impression might critically affect their attitude towards their future use of the library. With this in mind, library staff must hone their people skills to be psychologically prepared to appropriately serve these users.

Students attending evening classes have a higher level of not feeling comfortable in the library. This may be due to the fact that the evening class program allows little between-class time for students to visit the library. The fact that these students have relatively little time to visit the library results in a higher level of unfamiliarity compared to the day-program students. Therefore, library staff at JUST must find a way to help these students become familiar with the library.

This study also found that the level of anxiety and frequency of library use are reversely correlated in JUST. That is, the higher the anxiety the lower frequency of library use. This relationship is further supported by the findings regarding the characteristics of the frequent user group, which are mostly opposite the higher anxiety group. High frequency users at JUST are as follows:

1. Freshmen tend to use the library the least frequent. Juniors and sophomores tend to use the library more frequently than seniors.
2. Electronics & Information students tend to use the library the most frequent.
3. Students who attend the regular day-time program tend to use the library the most frequent.
4. Students who have a part-time job or a full-time job tend to use the library less frequent than those who do not have a job.

Overall, the results of this study lead the researcher to appreciate the profound effect that a user education program has on library anxiety. The detailed findings reveal the diverse nature of students and their different challenges regarding library anxiety. These specific findings urge us, as library services providers, to not only provide a homogeneous introductory education program, but also to identify those who need help the most. In the case of JUST, they are female, Liberal Arts majors, students attending the Evening classes program and freshmen.

Suggestions

The following are some suggestions compiled from thoughts of the researcher own and inputs from fellow library staff in JUST:

1. Continue strengthening the basic contents of library tours and library instruction programs to freshmen. Once freshmen are familiar with the resources, facilities and services of the library, they will have a stronger desire to use the library in coming years.
2. Maintain a high level of availability of equipments in the library, such as computers, DVD players, copy machines and other electronic equipments, since it might influence the willingness for most students to use the library. Provide concise on-the-spot self-service instruction for each equipment, so that sophisticated users can easily and efficiently obtain operational information, leaving library staff more time to assist the more anxious users.
3. Involve teaching faculty in developing library instruction program. Library staff should establish close and good relationships with teaching faculty, and work together to implement a library instruction program and to integrate library resources into the curriculum in a variety of classes. This partnership of faculty-librarian will promote the use of library resources to the students and help students become familiar with the library facilities and services. Furthermore, since Liberal Arts students show higher levels of library anxiety than other students, it is advisable that library staff collaborate with teachers from the college of Liberal Arts as their first priority.
4. Library staff should try and design a series of subject-oriented and research-based bibliographic instruction programs or courses for those students who use the library most frequent and show the lowest levels of library anxiety, such as the Electronics & Information students. Such advanced training activities with respect to instructions in the use of the library will provide students with an ability to finish their own research assignments in the future.
5. The library should encourage reservations for small groups of students to tour the library during working hours, especially for those who attend the evening classes program, the weekend classes program, or those who have a part-time or full-time job. This kind of flexible service with respect to library

instruction is another way to facilitate students to familiarize themselves with the library and allow them to better enjoy their visits to the library.

6. The library should consider recruiting some IT students as assistants to assist those students who are not familiar with the library's facilities, and the resources in the Audio/Video center, computer labs and copy rooms, etc.
7. E-learning is becoming an increasingly important approach for user education, so the library should consider developing an online learning program in library use or provide an online reference service for those students who are too busy to attend library tours or library instructional activities, such as students attending evening classes. In addition, this study suggests that the teaching faculty, especially in the college of Liberal Arts of JUST, should attempt to use more IT tools in their classes. This may help students to become familiar with some of the new technologies.

This study initially intended to use JUST as a testing ground to explore and expand upon the academic findings based on valuable insights gathered from literature reviews. However, the researcher found that in the process of practicing the findings of this study, particularly getting the JUST library staff properly involved, provided some unexpected merits. First, when the researcher shared the preliminary survey results and the literature review findings with the JUST library staff, they

were quite interested and discussed different characteristics of users whom the staff deals with on a daily basis. They also strongly related to the common phenomena from the literature reviews and the survey in this study. It encouraged them and provided re-enforcement for them to continue their effort in library education. At the same time, the differences among the different studies triggered some interesting and lively discussions among them. They also pro-actively contributed some ideas and suggestions for this study, which are summarized in this section. Such knowledge and information sharing builds up the morale of the library staff in a way not anticipated by the researcher.

Second, this exercise has an implicit but profound value of effectively arousing the interests of the JUST library staff to obtain a better understanding the library users and to take a pro-active approach in improving their own practices. This study also identified certain similar as well as contradictory findings to other studies, which were sampled on different populations of library users in different countries and different cultures. Nevertheless, the JUST library staff and the researcher most appreciated the experiences of going through the process of searching answers specifically for the JUST library. All the previous knowledge is of great value as a guideline and a reference, but it may not necessarily be applicable to the JUST environment.

In conclusion, the researcher would like to offer a suggestion to all libraries concerning library anxiety and library use: Conduct a research on your own users. The results of your own investigation will

be fruitful beyond the present paper or any previous literature.

into Chinese for use in assessing the levels of library anxiety of the students at Jinwen University of Science and Technology.

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