

CHAPTER IV

RESULTS

4.1 Introduction

Prior to describing the results of the need assessment, it is useful to summarize the outcomes of phase-1 of the Library Development Project, namely, “ Defining vision, mission and key performance indicators”.

4.1.1 Vision Statement:

The LDC defined the library vision statement as follows : “To be the information center that stimulates self-learning among the SCPH-C community for the production and continuous development of public health workers”.

4.1.2 Mission statement

The LDC defined the library vision statement as follows : “Create a continuous self- learning culture through the provision of up- to- date learning resources, media and quality services”.

4.1.2 Key Performance Indicators

Based on the above vision and mission statements, performance indicators were defined in clusters of five main factors: (1) Information resources (2) Facilities, (3) Services, (4) Physical environment and (5) Staff.

Table 1: Key Performance Indicators

Index	KPI*	Target Standard	Verifiable Source
Information resource	<u>Printed material</u> <ul style="list-style-type: none"> • % of books published after 1992 • No. of books by priority curriculum subject • No. of Thai Journals by curriculum field or discipline • No. of English Journals by curriculum field or discipline • No. of copies for top-100 frequency use • %of books with hard cover 	<ul style="list-style-type: none"> • 50% • 5 publications per subject • Minimum 1 per discipline • Minimum 1 per discipline • Minimum 3 copies • 100% hard cover 	<ul style="list-style-type: none"> • Library inventory • Library inventory • Library inventory • Library inventory • Library records and inventory • Library inventory and survey • Library inventory and survey
	<u>Non-printed material</u> <ul style="list-style-type: none"> • No. of non-printed material sources by priority of curriculum subject 	<ul style="list-style-type: none"> • Minimum 1 per subject 	
Facilities	<ul style="list-style-type: none"> • No. of computers for internet search • No. of computers for library information sources search 	<ul style="list-style-type: none"> • 2 computers in the library • 1 computers in the library 	<ul style="list-style-type: none"> • Library inventory • Library inventory

Table 1 : (Cont.) Key Performance Indicators

Index	KPI*	Target Standard	Verifiable Source
Facilities	• No of computers not older than of 5 years	• All computers \leq 5 years	• Library survey
	• Percent of perceived condition of computers	• 70% user agreement	• Library survey
	• No. of instruments for non-printed materials	• 1 instrument per each type of existing non-printed materials	• Library inventory
	• Percent of perceived condition of instrument for non-printed materials	• 70% user agreement on instrument number and condition	• Library survey
Physical environment	• Percent of perceived light	• 70% user agreement	• Library survey
	• Percent of perceived noise	• 70% user agreement	• Library survey
	• Percent of perceived temperature of reading space	• 70% user agreement	• Library inventory
	• No. of table and chair	• Minimum 25% of No. of users	• Library inventory
	• Percent of perceived condition of table and chair	• 70% user agreement	• Library survey
	• Percent of perceived space decoration	• 70% user agreement	• Library survey

Table 1 : (Cont.) Key Performance Indicators

Index	KPI*	Target Standard	Verifiable Source
Services	• Type of service	• Library standards consist of reading, self-learning room, circulation, Inter-library loan, question answering and search assistance	• Library inventory
	• Service condition	• 70% user agreement	• Library survey
	• Manual searching	• 70% user agreement	• Library survey
	• Catalogue card search	• 100% information sources coverage and 70% user agreement	• Library inventory and survey
	• Computer search	• 100% information sources coverage and 70% user agreement	• Library inventory and survey
Staff	• No. of staff	• Academic library standard consist of 1 manager, 1 librarian and 1 assistant	• Library inventory
	• Staff manner	• 70% user agreement	• Library survey
	• Service preparation	• 70% user agreement	• Library survey

* : Key Performance Indicator

4.2 Result of Need Assessment

Step-1 : Identified Possible Need

In this step there are 4 activities (1) self administered open-ended questionnaires survey, (2) focus group discussion, (3) librarian in-depth interview and (4) panel discussion.

Results of self-administered open-ended questionnaires survey

The respondents needed the increasing of some contents. Some named the titles of the books needed while the others suggested the authors of the books.

They also complained about and gave suggestions for the library services, such as, copying machines, computers, information sources, cataloging and shelves' label, number of copies of books, temperature and noise. Furthermore, they even requested for more up-to-date books.

Results of focus group discussion

The results can be divided into 5 categories:

(1) Information resources

The respondents complained about availability of books, books of old edition, and the condition of books. They suggested working on book protection before being put into circulation.

(2) Facilities

The respondents complained about inadequate computers for Internet searching and the instruments for non-printed materials were sometimes not ready for use.

(3) Physical environment

The respondents complained about high temperature, loud noise, bright light in afternoon and they also suggested about making the library look more pleasant.

Tables and chairs were enough but carrels needed to be increased.

(4) Services

The respondents complained about intra-library searching by the computer because the data base was not up-to-date. The library software was also inefficient because they could not show the availability of books, whether they were on shelf or had been checked out. In addition, there was problem of manual search because shelves' label was unclear.

(5) Staff

The respondents were satisfied with library staff.

Results of librarian in-depth interview

The results can be divided into 5 categories:

(1) Information resources

The number of Thai books were in line with the requirement of certificate programs but for bachelor 's degree, some disciplines should be increased, such as, occupational health, environmental sciences , etc. Mahidol university requested for more public health journals, environmental journals and English text books.

The library had instruments for book protection but they could not be put in good use because of shortages of library staff.

Book arrangement still posed a problem because the number of book ends were insufficient. It was also found that built-in book dividers were not suitable.

(2) Facilities

The computers in the library were older than 5 years and one more computer should be set up exclusively for Internet search.

(3) Physical environment

The librarian planned for space separation into reference room and one more self-study room, according to the pattern of academic library.

The temperature was too high particularly in Summer. When electric fans were used, they blew up reading materials, annoying the readers.

(4) Services

The most important thing was the computer system for library management. At this time the librarian had to type two times for one book providing for service. First, it was for bar-code marking and secondly for intra-library search. This made the matter more complicated and time consuming. If there was better software which could connect each part of service providing, the librarian could have time to do other works.

(5) Staff

The librarian perceived that she had many things in her mind to do but there was a budget limitation and she was the only one staff providing services in the entire library. As a consequence, she couldn't go out for self development and implemented create activities for library development.

Results of panel discussion

The LDC considered the results of self administered open-ended questionnaires survey, focus group discussion, librarian in-depth interview parallel with the vision, mission and key performance indicators. Panel discussions resulted in defining sets of possible needs into 5 clusters of key factors : (1) Information resources, (2) Facilities, (3) Physical Environment, (4) Services and (5) Staff. For each of these factors, sets of possible needs were identified. The detailed breakdown of these factors into needs is presented in the survey structured questionnaire, for instance :

- (1) Information resources : sources of information both printed and non-printed materials, adequacy of each source, conditions of information sources, contents of printed materials related to curriculum subjects.
- (2) Facilities : consisting of computers for Internet search and audio-visual instruments for non-printed materials, adequacy of facilities, and conditions of facilities.
- (3) Physical Environment : light, temperature, noise, tables and chairs, space arrangement and decoration.
- (4) Services : information searching by the card system, information search by computer, manual search, and check-out services.

(5) Staff : No of staff, staff's manner, condition of service providing.

In addition, the LDC wanted to know whether the library service hours were suitable, so time spent in the library of users became one topic in the structured questionnaire.

Step-2 : Prioritized needs

In this step, there are 2 activities (1) self administered structured questionnaire survey and (2) in-depth interview.

Results of structured questionnaire survey:

The results were compared between teachers and students, and among student groups from the 4 educational programs using the Chi-square test to identify statistically significant differences between the various respondent groups. The level of significance was set at p-value 0.05.

As presented in Table 2, there are 561 respondents, consist of 517 students and 44 faculties. The students can be divided into 4 programs ; Bachelor of Public Health, Certificate of Community Health, Certificate of Dental Public Health, and Certificate of Pharmacy Technique. The faculties are the member of 4 departments ; Community Health, Dental Public Health, Pharmacy Technique, and Human Resource Development.

Table 2 : Demographic data

Students	1 year	2 year	3 year	4 year	Total
Bachelor of Public Health	46 (8.2%)	44 (7.84%)	50 (8.91%)	46 (8.2%)	186 (33.15%)
Certificate of Community Health	70 (12.48%)	52 (9.27%)			122 (21.75%)
Certificate of Dental Public Health	46 (8.2%)	66 (11.76%)			112 (19.96%)
Certificate of Pharmacy Technique	50 (8.91%)	47 (8.38%)			97 (17.29%)
Total student					517 (92.15%)
Department	Faculties member				
Community Health	14 (2.49%)				
Dental Public Health	15 (2.66%)				
Pharmacy Technique	9 (1.6%)				
Human Resource Development	6 (1.1%)				
Total faculty					44 (7.85%)
Total respondent	561 (100%)				

As presented in Table 3, most of the respondents usually use the library from Mondays to Fridays between 8.30-16.30 hrs. There was a statistically significant difference between teachers and students in using time from Mondays to Fridays between 8.30-16.30 hrs. More teachers used the library during this period than students.

However, from Mondays to Fridays between 16.30-20.00 hrs. and on Saturdays between 8.30-16.30 hrs, more students used the library at this time than teachers.

Table 3 : Distribution of Time Spent in the Library among Teachers and Students

Time spent in library	Group	N	Freq.		%		p-value
			Use	Use	Don't use	Don't use	
Monday – Friday 08.30-16.30	total	561	419	74.69	142	25.31	0.003*
	teacher	44	41	93.18	3	6.82	
	student	517	378	73.11	139	26.89	
Monday – Friday 16.30-20.00	total	561	175	31.19	386	68.81	0.001*
	teacher	44	4	9.09	40	90.91	
	student	517	171	33.08	346	66.92	
Saturday 08.30-16.30	total	561	129	22.99	432	77.01	0.008*
	teacher	44	3	6.82	41	93.18	
	student	517	126	24.37	391	75.63	

* : significant difference

Table 4 indicates that most of the respondents needed the library to increase general books (additional reading for each subject) and recreational books for printed sources, VCD, maps and pictures, and anatomical models for non-printed sources. There was a significant difference between teachers and students in perceived needs to increase printed sources. The teachers had higher expectations on the availability of English journals, English text books and reference books. In contrast the students had higher expectations for English newspapers and general books. There was also a significant difference between teachers and students on non-printed sources. Students had higher expectations on O.H. transparencies, maps and pictures, anatomical models and CD-ROM availability.

Table 4 : Distribution of Information Sources needed to be Increased among Teachers and Students

Information sources	Group	N	Freq. Need	% Need	Freq. Don't need	% Don't need	p-value
Printed sources							
Thai newspapers	total	561	147	26.2	414	73.8	0.048*
	teacher	44	6	13.64	38	86.36	
	student	517	141	27.27	376	72.73	
English newspapers	total	561	94	16.76	467	83.24	<0.001*
	teacher	44	16	36.36	28	63.64	
	student	517	78	15.09	439	84.91	
Thai journals	total	561	159	28.34	402	71.66	0.594
	teacher	44	14	31.82	30	68.18	
	student	517	145	28.05	372	71.95	
English journals	total	561	98	17.47	463	82.53	<0.001*
	teacher	44	23	52.27	21	47.73	
	student	517	75	14.51	442	85.49	
Thai text books	total	561	207	36.9	354	63.1	0.803
	teacher	44	17	38.64	27	61.36	
	student	517	190	36.75	327	63.25	
English text books	total	561	95	16.93	466	83.07	0.002*
	teacher	44	15	34.09	29	65.91	
	student	517	80	15.47	437	84.53	
General books	total	561	418	74.51	143	25.49	<0.001*
	teacher	44	19	43.18	25	56.82	
	student	517	399	77.18	118	22.82	
Recreational books	total	561	378	67.38	183	32.62	0.059
	teacher	44	24	54.55	20	45.45	
	student	517	354	68.47	163	31.53	
Reference books	total	561	138	24.6	423	75.4	<0.001*
	teacher	44	24	54.55	20	45.45	
	student	517	114	22.05	403	77.95	

Table 4 : (Cont.) Distribution of Information Sources needed to be Increased among Teachers and Students

Information sources	Group	N	Freq. Need	% Need	Freq. Don't need	% Don't need	p-value
Non – printed sources							
Videos	total	561	207	36.90	354	63.10	0.566
	teacher	44	18	40.91	26	59.09	
	student	517	189	36.56	328	63.44	
VCD	total	561	342	60.96	219	39.04	0.218
	teacher	44	23	52.27	21	47.73	
	student	517	319	61.70	198	38.30	
Slides	total	561	136	24.24	425	75.76	0.02*
	teacher	44	17	38.64	27	61.36	
	student	517	119	23.02	398	76.98	
O. H. transparencies	total	561	70	12.48	491	87.52	<0.001*
	teacher	44	1	2.27	43	97.73	
	student	517	69	13.35	448	86.65	
Maps and pictures	total	561	232	41.35	329	58.65	<0.001*
	teacher	44	1	2.27	43	97.73	
	student	517	231	44.68	286	55.32	
Anatomical models	total	561	265	47.24	296	52.76	<0.001*
	teacher	44	1	2.27	43	97.73	
	student	517	264	51.06	253	48.94	
CD –ROM	total	561	200	35.65	361	64.35	0.002*
	teacher	44	1	2.27	43	97.73	
	student	517	199	38.49	318	61.51	

* : significant difference

As shown in Table 5, most of respondents needed the library to increase the content of general psychology, human and environment in anthropology and social sciences category, the content of education in education category, the content of Thai and English in linguistics category, the content of computer science, anatomy and physiology in sciences and mathematics category, the content of first aid, public health law, public health management, introduction to public health, communicable and non-communicable diseases, infectious diseases in basic professionals category, the content of nursing, community health planning and evaluation and health promotion in public health professions category, the content of dental anatomy in dental public health category, the content of introduction to pharmacy, pharmacology, pharmacy public health, pharmacognosy and dispensing in pharmacy professions category.

There was a significant difference between teachers and students in perceived need to increase the content. The students had higher expectations than teachers on availability of almost every content in anthropology and social sciences category, except philosophy and religion, principle of public relations, ethics, information systems for management and quality of life development; almost every content in public health professions category, except community health planning and evaluation and elderly health; almost every content in dental public health category, except dental pathology, dental diagnosis, gingivology and dental radiation; every content in education category, linguistics category, sciences and mathematics category, basic professional category and pharmacy professions category.

Table 5 : Distribution of Content needed to be Increased among Teachers and Students

Content	Group	N	Freq. Need	% Need	Freq. Don't need	% Don't need	p-value
Anthropology and social sciences							
General psychology	total	561	223	39.75	338	60.25	0.002*
	teacher	44	8	18.18	36	81.82	
	student	517	215	41.59	302	58.41	
Philosophy and religion	total	561	97	17.29	464	82.71	0.056
	teacher	44	3	6.82	41	93.18	
	student	517	94	18.18	423	81.82	
Economy	total	561	111	19.79	450	80.21	0.008*
	teacher	44	2	4.55	42	95.45	
	student	517	109	21.08	408	78.92	
Political science	total	561	133	23.71	428	76.29	0.002*
	teacher	44	2	4.55	42	95.45	
	student	517	131	25.34	386	74.66	
General law	total	561	216	38.50	345	61.5	<0.001*
	teacher	44	4	9.09	40	90.91	
	student	517	212	41.01	305	58.99	
Principles of public relations	total	561	91	16.22	470	83.78	0.628
	teacher	44	6	13.64	38	86.36	
	student	517	85	16.44	432	83.56	
Geography	total	561	89	15.86	472	84.14	0.003*
	teacher	44	0	0.00	44	100	
	student	517	89	17.21	428	82.79	
Ethics	total	561	112	19.96	449	80.04	0.274
	teacher	44	6	13.64	38	86.36	
	student	517	106	20.50	411	79.5	
Information systems for management	total	561	148	26.38	413	73.62	0.829
	teacher	44	11	25.00	33	75	
	student	517	137	26.50	380	73.5	

Table 5 : (Cont.) Distribution of Content needed to be Increased among Teachers and Students

Content	Group	N	Freq. Need	% Need	Freq. Don't need	% Don't need	p-value
Human and environment	total	561	243	43.32	318	56.68	<0.001*
	teacher	44	6	13.64	38	86.36	
	student	517	237	45.84	280	54.16	
Thai politics	total	561	123	21.93	438	78.07	0.032*
	teacher	44	4	9.09	40	90.91	
	student	517	119	23.02	398	76.98	
Quality of life development	total	561	218	38.86	343	61.14	0.1
	teacher	44	12	27.27	32	72.73	
	student	517	206	39.85	311	60.15	
Education							
Library using	total	561	70	12.48	491	87.52	0.009*
	teacher	44	0	0.00	44	100.00	
	student	517	70	13.54	447	86.46	
Health	total	561	181	32.26	380	67.74	<0.001*
	teacher	44	2	4.55	42	95.45	
	student	517	179	34.62	338	65.38	
Education	total	561	343	61.14	218	38.86	0.001*
	teacher	44	17	38.64	27	61.36	
	student	517	326	63.06	191	36.94	
Linguistics							
Thai	total	561	280	49.91	281	50.09	<0.001*
	teacher	44	8	18.18	36	81.82	
	student	517	272	52.61	245	47.39	
English	total	561	337	60.07	224	39.93	0.002*
	teacher	44	17	38.64	27	61.36	
	student	517	320	61.90	197	38.10	

Table 5 : (Cont.) Distribution of Content needed to be Increased among Teachers and Students

Content	Group	N	Freq. Need	% Need	Freq. Don't need	% Don't need	p-value
Sciences and mathematics							
General chemistry	total	561	184	32.80	377	67.20	<0.001*
	teacher	44	3	6.82	41	93.18	
	student	517	181	35.01	336	64.99	
Organic chemistry	total	561	117	20.86	444	79.14	0.006*
	teacher	44	2	4.55	42	95.45	
	student	517	115	22.24	402	77.76	
Physics	total	561	137	24.42	424	75.58	0.005*
	teacher	44	3	6.82	41	93.18	
	student	517	134	25.92	383	74.08	
Biology	total	561	153	27.27	408	72.72	0.002*
	teacher	44	3	6.82	41	93.18	
	student	517	150	29.01	367	70.99	
Bio-statistics and basic statistics	total	561	206	36.72	355	63.28	0.045*
	teacher	44	10	22.73	34	77.27	
	student	517	196	37.91	321	62.09	
Calculus	total	561	116	20.68	445	79.32	0.002*
	teacher	44	1	2.27	43	97.73	
	student	517	115	22.24	402	77.76	
General science	total	561	168	29.95	393	70.05	0.002*
	teacher	44	4	9.09	40	90.91	
	student	517	164	31.72	353	68.28	
Computer science	total	561	284	50.62	277	49.38	0.009*
	teacher	44	14	31.82	30	68.18	
	student	517	270	52.22	247	47.78	
Anatomy and Physiology	total	561	339	60.43	222	39.57	<0.001*
	teacher	44	7	15.91	37	84.09	
	student	517	332	64.22	185	35.78	

Table 5 : (Cont.) Distribution of Content needed to be Increased among Teachers and Students

Content	Group	N	Freq. Need	% Need	Freq. Don't need	% Don't need	p-value
Genetics	total	561	168	29.95	393	70.05	0.005*
	teacher	44	5	11.36	39	88.64	
	student	517	163	31.53	354	68.47	
Basic professionals							
First aid	total	561	275	49.02	286	50.98	<0.001*
	teacher	44	4	9.09	40	90.91	
	student	517	271	52.42	246	47.58	
Public health law	total	561	232	41.35	329	58.65	<0.001*
	teacher	44	5	11.36	39	88.64	
	student	517	227	43.91	290	56.09	
Public health management	total	561	231	41.18	330	58.82	<0.001*
	teacher	44	7	15.91	37	84.09	
	student	517	224	43.33	293	56.67	
Introduction to public health	total	561	238	42.42	323	57.58	<0.001*
	teacher	44	4	9.09	40	90.91	
	student	517	234	45.26	283	54.74	
Medical jurisprudence	total	561	173	30.84	388	69.16	<0.001*
	teacher	44	3	6.82	41	93.18	
	student	517	170	32.88	347	67.12	
Mental health	total	561	192	34.22	369	65.78	0.003*
	teacher	44	6	13.64	38	86.36	
	student	517	186	35.98	331	64.02	
Communicable and non-communicable diseases	total	561	241	42.96	320	57.04	<0.001*
	teacher	44	7	15.91	37	84.09	
	student	517	234	45.26	283	54.74	
Infectious diseases	total	561	222	39.57	339	60.43	<0.001*
	teacher	44	1	2.27	43	97.73	
	student	517	221	42.75	296	57.25	

Table 5 : (Cont.) Distribution of Content needed to be Increased among Teachers and Students

Content	Group	N	Freq. Need	% Need	Freq. Don't need	% Don't need	p-value
Basics of population science	total	561	94	16.76	467	83.24	0.024*
	teacher	44	2	4.55	42	95.45	
	student	517	92	17.79	425	82.21	
Public health seminars	total	561	106	18.89	455	81.11	0.033*
	teacher	44	3	6.82	41	93.18	
	student	517	103	19.92	414	80.08	
Parasitology	total	561	172	30.66	389	69.34	0.004*
	teacher	44	5	11.36	39	88.64	
	student	517	167	32.30	350	67.70	
Public health professions							
Nursing	total	561	235	41.89	326	58.11	<0.001*
	teacher	44	3	6.82	41	93.18	
	student	517	232	44.87	285	55.13	
Family health	total	561	169	30.12	392	69.88	<0.001*
	teacher	44	3	6.82	41	93.18	
	student	517	166	32.11	351	67.89	
Basic treatment	total	561	214	38.15	347	61.85	<0.001*
	teacher	44	4	9.09	40	90.91	
	student	517	210	40.62	307	59.38	
Hygiene	total	561	128	22.82	433	77.18	0.008*
	teacher	44	3	6.82	41	93.18	
	student	517	125	24.18	392	75.82	
Nutrition	total	561	159	28.34	402	71.66	0.024*
	teacher	44	6	13.64	38	86.36	
	student	517	153	29.59	364	70.41	
Community health	total	561	210	37.43	351	62.57	0.001*
	teacher	44	6	13.64	38	86.36	
	student	517	204	39.46	313	60.54	

Table 5 : (Cont.) Distribution of Content needed to be Increased among Teachers and Students

Content	Group	N	Freq. Need	% Need	Freq. Don't need	% Don't need	p-value
Occupational health	total	561	172	30.66	389	69.34	<0.001*
	teacher	44	1	2.27	43	97.73	
	student	517	171	33.08	346	66.92	
Epidemiology	total	561	196	34.94	365	65.06	0.006*
	teacher	44	7	15.91	37	84.09	
	student	517	189	36.56	328	63.44	
Water sanitation	total	561	141	25.13	420	74.87	0.001*
	teacher	44	2	4.55	42	95.45	
	student	517	139	26.89	378	73.11	
Medical science	total	561	88	15.69	473	84.31	0.011*
	teacher	44	1	2.27	43	97.73	
	student	517	87	16.83	430	83.17	
Medical service	total	561	158	28.16	403	71.84	0.001*
	teacher	44	3	6.82	41	93.18	
	student	517	155	29.98	362	70.02	
Community health planning and evaluation	total	561	144	25.67	417	74.33	0.123
	teacher	44	7	15.91	37	84.09	
	student	517	137	26.50	380	73.50	
Maternal and child health	total	561	171	30.48	390	69.52	<0.001*
	teacher	44	2	4.55	42	95.45	
	student	517	169	32.69	348	67.31	
Food sanitation	total	561	154	27.45	407	72.55	<0.001*
	teacher	44	2	4.55	42	95.45	
	student	517	152	29.40	365	70.60	
Environmental sanitation	total	561	183	32.62	378	67.38	0.001*
	teacher	44	4	9.09	40	90.91	
	student	517	179	34.62	338	65.38	

Table 5 : (Cont.) Distribution of Content needed to be Increased among Teachers and Students

Content	Group	N	Freq. Need	% Need	Freq. Don't need	% Don't need	p-value
Health promotion	total	561	238	42.42	323	57.58	0.001*
	teacher	44	8	18.18	36	81.82	
	student	517	230	44.49	287	55.51	
Drug addiction and alcoholism	total	561	100	17.83	461	82.17	0.017*
	teacher	44	2	4.55	42	95.45	
	student	517	98	18.96	419	81.04	
Management for sustainable development	total	561	134	23.89	427	76.11	0.042*
	teacher	44	5	11.36	39	88.64	
	student	517	129	24.95	388	75.05	
Elderly health	total	561	129	22.99	432	77.01	0.245
	teacher	44	7	15.91	37	84.09	
	student	517	122	23.60	395	76.40	
Study of body competence	total	561	140	24.96	421	75.04	0.03*
	teacher	44	5	11.36	39	88.64	
	student	517	135	26.11	382	73.89	
Social, cultural and sustainable development	total	561	134	23.89	427	76.11	0.042*
	teacher	44	5	11.36	39	88.64	
	student	517	129	24.95	388	75.05	
Toxicology and industrial medicine	total	561	127	22.64	434	77.36	0.025*
	teacher	44	4	9.09	40	90.91	
	student	517	123	23.79	394	76.21	
Advise and counseling principles	total	561	152	27.09	409	72.91	0.002*
	teacher	44	3	6.82	41	93.18	
	student	517	149	28.82	368	71.18	
Dental public health							
Dental anatomy	total	561	225	40.11	336	59.89	<0.001*
	teacher	44	4	9.09	40	90.91	
	student	517	221	42.75	296	57.25	

Table 5 : (Cont.) Distribution of Content needed to be Increased among Teachers and Students

Content	Group	N	Freq. Need	% Need	Freq. Don't need	% Don't need	p-value
Dental pathology	total	561	110	19.61	451	80.39	0.151
	teacher	44	5	11.36	39	88.64	
	student	517	105	20.31	412	79.69	
Dental diagnosis	total	561	171	30.48	390	69.52	0.244
	teacher	44	10	22.73	34	77.27	
	student	517	161	31.14	356	68.86	
Dental medicine	total	561	185	32.98	376	67.02	0.001*
	teacher	44	5	11.36	39	88.64	
	student	517	180	34.82	337	65.18	
Dental surgery	total	561	157	27.99	404	72.01	0.011*
	teacher	44	5	11.36	39	88.64	
	student	517	152	29.40	365	70.60	
Gingivology	total	561	120	21.39	441	78.61	0.589
	teacher	44	8	18.18	36	81.82	
	student	517	112	21.66	405	78.34	
Dental prevention	total	561	198	35.29	363	64.71	0.005*
	teacher	44	7	15.91	37	84.09	
	student	517	191	36.94	326	63.06	
Community dental health	total	561	190	33.87	371	66.13	0.009*
	teacher	44	7	15.91	37	84.09	
	student	517	183	35.40	334	64.60	
Dental sanitation	total	561	194	34.58	367	65.42	0.040*
	teacher	44	9	20.45	35	79.55	
	student	517	185	35.78	332	64.22	
Dental radiation	total	561	124	22.10	437	77.90	0.074
	teacher	44	5	11.36	39	88.64	
	student	517	119	23.02	398	76.98	

Table 5 : (Cont.) Distribution of Content needed to be Increased among Teachers and Students

Content	Group	N	Freq. Need	% Need	Freq. Don't need	% Don't need	p-value
Dental public health	total	561	217	38.68	344	61.32	0.024*
	teacher	44	10	22.73	34	77.27	
	student	517	207	40.04	310	59.96	
Pharmacy professions							
Introduction to pharmacy	total	561	351	62.57	210	37.43	<0.001*
	teacher	44	7	15.91	37	84.09	
	student	517	344	66.54	173	33.46	
Pharmacology	total	561	220	39.22	341	60.78	0.001*
	teacher	44	7	15.91	37	84.09	
	student	517	213	41.20	304	58.80	
Pharmacy public health	total	561	226	40.29	335	59.71	<0.001*
	teacher	44	5	11.36	39	88.64	
	student	517	221	42.45	296	57.55	
Pharmacognosy	total	561	296	52.76	265	47.24	0.023*
	teacher	44	16	36.36	28	63.64	
	student	517	280	54.16	237	45.84	
Drug dispensing	total	561	265	47.24	296	52.76	<0.001*
	teacher	44	4	9.09	40	90.91	
	student	517	261	50.48	256	49.52	
Drug stock management	total	561	151	26.92	410	73.08	0.002*
	teacher	44	3	6.82	41	93.18	
	student	517	148	28.63	369	71.37	
Pharmaceutical sciences	total	561	149	26.56	412	73.44	0.043*
	teacher	44	6	13.64	38	86.36	
	student	517	143	27.66	374	72.34	

* : significant difference

As presented in Table 6, most of the respondents agreed that printed materials and non-printed materials were in good condition. In contrast with their perceptions on computers for Internet searching and audio-visual instruments for non-printed materials, they were considered quite inadequate.

There was a significant difference between teachers and students in perceived agreement on the condition : “non-printed materials are up-to-date”. The students had lower agreement on this condition.

Table 6 : Distribution of Agreement on SCPH-C Library Information Resources' Condition among Teachers and Students

Conditions	Group	N	Agree		Disagree		p-value
			Freq.	%	Freq.	%	
Printed materials are in total good condition.	total	561	490	87.34	71	12.66	0.225
	teacher	44	41	93.18	3	6.82	
	student	517	449	86.85	68	13.15	
Printed materials are up-to-date.	total	561	325	57.93	236	42.07	0.338
	teacher	44	21	47.73	23	52.27	
	student	517	304	58.80	213	41.20	
Non-printed materials are in good condition.	total	561	407	72.55	154	27.45	0.704
	teacher	44	33	75.00	11	25.00	
	student	517	374	72.34	143	27.66	
Non-printed materials are up-to-date.	total	561	312	55.61	249	44.39	0.007*
	teacher	44	16	36.36	28	63.64	
	student	517	296	57.25	221	42.75	
Audio – visual instruments for non-printed material are adequate.	total	561	230	41.00	331	59.00	0.332
	teacher	44	15	34.09	29	65.91	
	student	517	215	41.59	302	58.41	
Audio – visual instruments for non-printed material are in good condition.	total	561	370	65.95	191	34.05	0.096
	teacher	44	24	54.55	20	45.45	
	student	517	346	66.92	171	33.08	
Computers for internet search are adequate.	total	561	187	33.33	374	66.67	0.267
	teacher	44	18	40.91	26	59.09	
	student	517	169	32.69	348	67.31	
Computers for internet search are in good condition.	total	561	317	56.51	244	43.49	0.055
	teacher	44	23	52.27	21	47.73	
	student	517	294	56.87	223	43.13	

* : significant difference

As shown in Table 7, most of the respondents agreed that light was suitable for reading, tables and chairs were adequate and comfortable, and space arrangement with book shelves was suitable.

There was no significant difference between teachers and students in perceived agreement on physical environment conditions.

Table 7 : Distribution of Agreement on SCPH-C Library Physical Environment's Condition among Teachers and Students

Conditions	Group	N	Freq.	%	Freq.	%	p-value
			Agree	Agree	Disagree	Disagree	
Light is suitable for reading.	total	561	546	97.33	15	2.67	0.864
	teacher	44	43	97.73	1	2.27	
	student	517	503	97.29	14	2.71	
Temperature is suitable for library use.	total	561	366	65.24	195	34.76	0.222
	teacher	44	25	56.82	19	43.18	
	student	517	341	65.96	176	34.04	
No noise disturbance, library is quiet.	total	561	388	69.16	173	30.84	0.382
	teacher	44	33	75.00	11	25.00	
	student	517	355	68.67	162	31.33	
Tables and chairs are adequate.	total	561	435	77.54	126	22.46	0.066
	teacher	44	39	88.64	5	11.36	
	student	517	396	76.60	121	23.40	
Tables and chairs are comfortable.	total	561	501	89.30	60	10.70	0.881
	teacher	44	39	88.64	5	11.36	
	student	517	462	89.36	55	10.64	
Space arrangement between book shelves is suitable.	total	561	437	77.90	124	22.10	0.389
	teacher	44	32	72.73	12	27.27	
	student	517	405	78.34	112	21.66	
Library is pleasant.	total	561	377	67.20	184	32.80	0.827
	teacher	44	28	63.64	16	36.36	
	student	517	349	67.50	168	32.50	

As shown in Table 8, most of the respondents agreed that the library provided rapid and easy borrowing-lending services. The one week duration and three books for

one borrowing was suitable and classification of printed materials was easy for manual search.

There was no significant difference between teachers and students in perceived agreement on service system's conditions.

Table 8 : Distribution of Agreement on SCPH-C Library Service System's Condition among Teachers and Students

Conditions	Group	N	Freq.	%	Freq.	%	p-value
			Agree	Agree	Disagree	Disagree	
The library can provide rapid and easy information sources by searching the card system.	total	561	419	74.69	142	25.31	0.681
	teacher	44	34	77.27	10	22.73	
	student	517	385	74.47	132	25.53	
The library can provide rapid and easy information sources by searching with computers.	total	561	358	63.81	203	36.19	0.2
	teacher	44	32	72.73	12	27.27	
	student	517	326	63.06	191	36.94	
The library provides rapid and easy check-out services.	total	561	542	96.61	19	3.39	0.196
	teacher	44	44	100.00	0	0.00	
	student	517	498	96.32	19	3.68	
Three books per one borrowing is suitable.	total	561	422	75.22	139	24.78	0.489
	teacher	44	35	79.55	9	20.45	
	student	517	387	74.85	130	25.15	
One week duration per one borrowing is suitable.	total	561	467	83.24	94	16.76	0.564
	teacher	44	38	86.36	6	13.64	
	student	517	429	82.98	88	17.02	
Classification of printed materials is easy for manual search.	total	561	430	76.65	131	23.35	0.527
	teacher	44	32	72.73	12	27.27	
	student	517	398	76.98	119	23.02	

As shown in Table 9, most of the respondents agreed that the number of library staff was adequate for service delivering. The library staff was friendly and enthusiastic for during services, spoke politely and responded to the questions rapidly and correctly.

There was no significant difference between teachers and students in perceived agreement on library staff's conditions.

Table 9 : Distribution of Agreement on SCPH-C Library Staff's Condition among Teachers and Students

Conditions	Group	N	Agree		Disagree		p-value
			Freq.	%	Freq.	%	
Number of library staff is adequate for library services .	total	561	458	81.64	103	18.36	0.236
	teacher	44	33	75.00	11	25.00	
	student	517	425	82.21	92	17.79	
The library staff is friendly.	total	561	521	92.87	40	7.13	0.056
	teacher	44	44	100.00	0	0.00	
	student	517	477	92.26	40	7.74	
The library staff speak politely.	total	561	544	96.97	17	3.03	0.222
	teacher	44	44	100.00	0	0.00	
	student	517	500	96.71	17	3.29	
The library staff is enthusiastic during services.	total	561	510	90.91	51	9.09	0.585
	teacher	44	41	93.18	3	6.82	
	student	517	469	90.72	48	9.28	
The library staff respond rapidly to the questions.	total	561	494	88.06	67	11.94	0.541
	teacher	44	40	90.91	4	9.09	
	student	517	454	87.81	63	12.19	
The library staff respond correctly to the questions.	total	561	512	91.27	49	8.73	0.639
	teacher	44	41	93.18	3	6.82	
	student	517	471	91.10	46	8.90	

As presented in Table 10, most of the students usually used the library from Mondays to Fridays between 8.30-16.30 hrs.

There was a statistically significant difference between educational programs in spending time in the library from Mondays to Fridays 8.30-16.30 hrs. Certificate of Community Public Health students used the library more at this time, whereas from Mondays to Fridays between 16.30-20.00 hrs. and on Saturdays between 8.30-16.30 hrs., Certificate of Pharmacy Technique students used the library more at this time.

Table 10 : Distribution of Time Spent in the Library among Students

Conditions	Group	N	Freq.	%	Freq.	%	p-value
			Agree	Agree	Disagree	Disagree	
Monday – Friday 08.30-16.30	total	517	378	73.11	139	26.89	<0.001*
	BPH	186	139	74.73	47	25.27	
	CCH	122	109	89.34	13	10.66	
	CDPH	112	71	63.39	41	36.61	
	CPT	97	59	60.82	38	39.18	
Monday – Friday 16.30-20.00	total	517	171	33.08	346	66.92	0.006*
	BPH	186	62	33.33	124	66.67	
	CCH	122	26	21.31	96	78.69	
	CDPH	112	42	37.50	70	62.50	
	CPT	97	41	42.27	56	57.73	
Saturday 08.30-16.30	total	517	126	24.37	391	75.63	0.001*
	BPH	186	57	30.65	129	69.35	
	CCH	122	15	12.30	107	87.70	
	CDPH	112	23	20.54	89	79.46	
	CPT	97	31	31.96	66	68.04	

* : significant difference

As presented in Table 11, most of the students wanted the library to increase general book and recreation book for printed sources, VCD and anatomical models for non-printed sources.

There was a significant difference between educational programs in perceived needs to increase printed and non-printed sources. For printed sources, the Bachelor degree of Public Health students had higher expectation on the availability of English journals. The Bachelor students of Public Health and Certificate students of Pharmacy Technique had higher expectation on the availability of Thai text books while the Bachelor students of Public Health, Certificate students of Community Health and Certificate students of Pharmacy Technique had higher expectation on the availability of recreation book. For non-printed sources, the Bachelor students of Public Health, Certificate students of Community Health and Certificate students of Pharmacy Technique had higher expectation on the availability of VCD while the Bachelor students of Public Health, Certificate students of Community Health and Certificate students of Dental Public Health had higher expectation on the availability of slides.

The Certificate students of Community Health had higher expectation on the availability of anatomical models whereas the Bachelor students of Public Health and Certificate students of Pharmacy Technique had higher expectation on the availability of CD-ROM.

Table 11 : Distribution of Information Sources Needed to be Increased among Students.

Printed sources	Group	N	Freq. Need	% Need	Freq. Don't need	% Don't need	p-value
Thai newspapers	total	517	141	27.27	376	72.73	0.01*
	BPH	186	41	22.04	145	77.96	
	CCH	122	45	36.89	77	63.11	
	CDPH	112	24	21.43	88	78.57	
	CPT	97	31	31.96	66	68.04	
English newspapers	total	517	78	15.09	439	84.91	0.014*
	BPH	186	38	20.43	148	79.57	
	CCH	122	21	17.21	101	82.79	
	CDPH	112	9	8.04	103	91.96	
	CPT	97	10	10.31	87	89.69	
Thai journals	total	517	145	28.05	372	71.95	0.155
	BPH	186	61	32.80	125	67.20	
	CCH	122	26	21.31	96	78.69	
	CDPH	112	29	25.89	83	74.11	
	CPT	97	29	29.90	68	70.10	
English journals	total	517	75	14.51	442	85.49	<0.001*
	BPH	186	42	22.58	144	77.42	
	CCH	122	14	11.48	108	88.52	
	CDPH	112	6	5.36	106	94.64	
	CPT	97	13	13.40	84	86.60	
Thai text books	total	517	190	36.75	327	63.25	<0.001*
	BPH	186	81	43.55	105	56.45	
	CCH	122	44	36.07	78	63.93	
	CDPH	112	20	17.86	92	82.14	
	CPT	97	45	46.39	52	53.61	

Table 11 : (Cont.) Distribution of Information Sources Needed to be Increased among Students.

Printed sources	Group	N	Freq. Need	% Need	Freq. Don't need	% Don't need	p-value
English text books	total	517	80	15.47	437	84.53	0.033*
	BPH	186	37	19.89	149	80.11	
	CCH	122	16	13.11	106	86.89	
	CDPH	112	9	8.04	103	91.96	
	CPT	97	18	18.56	79	81.44	
General books	total	517	399	77.18	118	22.82	0.071
	BPH	186	137	73.66	49	26.34	
	CCH	122	103	84.43	19	15.57	
	CDPH	112	81	72.32	31	27.68	
	CPT	97	78	80.41	19	19.59	
Recreation books	total	517	354	68.47	163	31.53	<0.001*
	BPH	186	133	71.51	53	28.49	
	CCH	122	91	74.59	31	25.41	
	CDPH	112	56	50.00	56	50.00	
	CPT	97	74	76.29	23	23.71	
Reference books	total	517	114	22.05	403	77.95	0.454
	BPH	186	46	24.73	140	75.27	
	CCH	122	23	18.85	99	81.15	
	CDPH	112	21	18.75	91	81.25	
	CPT	97	24	24.74	73	75.26	
Non-printed sources							
Videos	total	517	189	36.56	328	63.44	0.246
	BPH	186	78	41.94	108	58.06	
	CCH	122	41	33.61	81	66.39	
	CDPH	112	35	31.25	77	68.75	
	CPT	97	35	36.08	62	63.92	

Table 11 : (Cont.) Distribution of Information Sources Needed to be Increased among Students.

Printed sources	Group	N	Freq. Need	% Need	Freq. Don't need	% Don't need	p-value
VCD	total	517	319	61.70	198	38.30	<0.001*
	BPH	186	130	69.89	56	30.11	
	CCH	122	75	61.48	47	38.52	
	CDPH	112	49	43.75	63	56.25	
	CPT	97	65	67.01	32	32.99	
Slides	total	517	119	23.02	398	76.98	0.002*
	BPH	186	55	29.57	131	70.43	
	CCH	122	30	24.59	92	75.41	
	CDPH	112	25	22.32	87	77.68	
	CPT	97	9	9.28	88	90.72	
O. H. transparencies	total	517	69	13.35	448	86.65	0.073
	BPH	186	33	17.74	153	82.26	
	CCH	122	15	12.30	107	87.70	
	CDPH	112	8	7.14	104	92.86	
	CPT	97	13	13.40	84	86.60	
Maps and pictures	total	517	231	44.68	286	55.32	0.186
	BPH	186	84	45.16	102	54.84	
	CCH	122	63	51.64	59	48.36	
	CDPH	112	42	37.50	70	62.50	
	CPT	97	42	43.30	55	56.70	
Anatomical models	total	517	264	51.06	253	48.94	<0.001*
	BPH	186	109	58.60	77	41.40	
	CCH	122	77	63.11	45	36.89	
	CDPH	112	34	30.36	78	69.64	
	CPT	97	44	45.36	53	54.64	
CD – ROM	total	517	199	38.49	318	61.51	<0.001*
	BPH	186	87	46.77	99	53.23	
	CCH	122	38	31.15	84	68.85	
	CDPH	112	26	23.21	86	76.79	
	CPT	97	48	49.48	49	50.52	

* : significant difference

As shown in Table 12, most of the students wanted the library to increase the content of general psychology, general law, geography, ethics, Thai politics and quality of life development in anthropology and social sciences category; the content of education in education category; the content of Thai and English in linguistics category; the content of calculus, computer science, anatomy and physiology in sciences and mathematics category; the content of first aid, public health law, public health management, introduction to public health, communicable and non-communicable diseases, infectious diseases in basic professional category, the content of nursing, basic treatment, community health and health promotion in public health professions category; the content of dental anatomy and dental public health in dental public health category; and the content of introduction to pharmacy, pharmacology, pharmacy public health, pharmacognosy and dispensing in pharmacy professions category.

There was a significant difference between educational programs in perceived needs to increase the content. The BPH students had higher expectations on availability of contents in anthropology and social sciences category, sciences and mathematics category and basic professional category. The BPH and CCH students had higher expectations on availability of contents in public health professions category. The CDPH students had higher expectations on availability of contents in dental public health category. The CPT students had higher expectations on availability of contents in pharmacy professions category and linguistics category.

Table 12 : Distribution of Content Needed to be Increased among Students

Content	Group	N	Freq. Need	% Need	Freq. Don't need	% Don't need	p-value
Anthropology and social sciences							
General psychology	total	517	215	41.59	302	58.41	0.002*
	BPH	186	68	36.56	118	63.44	
	CCH	122	69	56.56	53	43.44	
	CDPH	112	40	35.71	72	64.29	
	CPT	97	38	39.18	59	60.82	
Philosophy and religion	total	517	94	18.18	423	81.82	<0.001*
	BPH	186	58	31.18	128	68.82	
	CCH	122	7	5.74	115	94.26	
	CDPH	112	19	16.96	93	83.04	
	CPT	97	10	10.31	87	89.69	
Economy	total	517	109	21.08	408	78.92	<0.001*
	BPH	186	68	36.56	118	63.44	
	CCH	122	13	10.66	109	89.34	
	CDPH	112	13	11.61	99	88.39	
	CPT	97	15	15.46	82	84.54	
Political science	total	517	131	25.34	386	74.66	<0.001*
	BPH	186	80	43.01	106	56.99	
	CCH	122	21	17.21	101	82.79	
	CDPH	112	9	8.04	103	91.96	
	CPT	97	21	21.65	76	78.35	
General law	total	517	212	41.01	305	58.99	0.231
	BPH	186	79	42.47	107	57.53	
	CCH	122	51	41.80	71	58.20	
	CDPH	112	37	33.04	75	66.96	
	CPT	97	45	46.39	52	53.61	

Table 12 : (Cont.) Distribution of Content Needed to be Increased among Students

Content	Group	N	Freq. Need	% Need	Freq. Don't need	% Don't need	p-value
Principles of public relations	total	517	85	16.44	432	83.56	<0.001*
	BPH	186	45	24.19	141	75.81	
	CCH	122	10	8.20	112	91.80	
	CDPH	112	22	19.64	90	80.36	
	CPT	97	8	8.25	89	91.75	
Geography	total	517	89	17.21	428	82.79	0.145
	BPH	186	38	20.43	148	79.57	
	CCH	122	24	19.67	98	80.33	
	CDPH	112	12	10.71	100	89.29	
	CPT	97	15	15.46	82	84.54	
Ethics	total	517	106	20.50	411	79.50	0.205
	BPH	186	38	20.43	148	79.57	
	CCH	122	19	15.57	103	84.43	
	CDPH	112	30	26.79	82	73.21	
	CPT	97	19	19.59	78	80.41	
Information systems for management	total	517	137	26.50	380	73.50	0.004*
	BPH	186	56	30.11	130	69.89	
	CCH	122	24	19.67	98	80.33	
	CDPH	112	21	18.75	91	81.25	
	CPT	97	36	37.11	61	62.89	
Human and environment	total	517	237	45.84	280	54.16	<0.001*
	BPH	186	100	53.76	86	46.24	
	CCH	122	69	56.56	53	43.44	
	CDPH	112	28	25.00	84	75.00	
	CPT	97	40	41.24	57	58.76	
Thai politics	total	517	119	23.02	398	76.98	0.099
	BPH	186	54	29.03	132	70.97	
	CCH	122	25	20.49	97	79.51	
	CDPH	112	23	20.54	89	79.46	
	CPT	97	17	17.53	80	82.47	

Table 12 : (Cont.) Distribution of Content Needed to be Increased among Students

Content	Group	N	Freq.	%	Freq.	%	p-value
			Need	Need	Don't need	Don't need	
Quality of life development	total	517	206	39.85	311	60.15	0.149
	BPH	186	77	41.40	109	58.60	
	CCH	122	50	40.98	72	59.02	
	CDPH	112	50	44.64	62	55.36	
	CPT	97	29	29.90	68	70.10	
Education							
Library using	total	517	70	13.54	447	86.46	0.659
	BPH	186	28	15.05	158	84.95	
	CCH	122	13	10.66	109	89.34	
	CDPH	112	17	15.18	95	84.82	
	CPT	97	12	12.37	85	87.63	
Health	total	517	179	34.62	338	65.38	0.748
	BPH	186	59	31.72	127	68.28	
	CCH	122	44	36.07	78	63.93	
	CDPH	112	42	37.50	70	62.50	
	CPT	97	34	35.05	63	64.95	
Education	total	517	326	63.06	191	36.94	0.015*
	BPH	186	122	65.59	64	34.41	
	CCH	122	86	70.49	36	29.51	
	CDPH	112	57	50.89	55	49.11	
	CPT	97	61	62.89	36	37.11	
Linguistics							
Thai	total	517	272	52.61	245	47.39	0.236
	BPH	186	89	47.85	97	52.15	
	CCH	122	73	59.84	49	40.16	
	CDPH	112	59	52.68	53	47.32	
	CPT	97	51	52.58	46	47.42	

Table 12 : (Cont.) Distribution of Content Needed to be Increased among Students

Content	Group	N	Freq. Need	% Need	Freq. Don't need	% Don't need	p-value
English	total	517	320	61.90	197	38.10	<0.001*
	BPH	186	124	66.67	62	33.33	
	CCH	122	78	63.93	44	36.07	
	CDPH	112	50	44.64	62	55.36	
	CPT	97	68	70.10	29	29.90	
Sciences and mathematics							
General chemistry	total	517	181	35.01	336	64.99	<0.001*
	BPH	186	67	36.02	119	63.98	
	CCH	122	49	40.16	73	59.84	
	CDPH	112	19	16.96	93	83.04	
	CPT	97	46	47.42	51	52.58	
Organic chemistry	total	517	115	22.24	402	77.76	<0.001*
	BPH	186	77	41.40	109	58.60	
	CCH	122	18	14.75	104	85.25	
	CDPH	112	5	4.46	107	95.54	
	CPT	97	15	15.46	82	84.54	
Physics	total	517	134	25.92	383	74.08	<0.001*
	BPH	186	61	32.80	125	67.20	
	CCH	122	29	23.77	93	76.23	
	CDPH	112	8	7.14	104	92.86	
	CPT	97	36	37.11	61	62.89	
Biology	total	517	150	29.01	367	70.99	<0.001*
	BPH	186	64	34.41	122	65.59	
	CCH	122	36	29.51	86	70.49	
	CDPH	112	15	13.39	97	86.61	
	CPT	97	35	36.08	62	63.92	

Table 12 : (Cont.) Distribution of Content Needed to be Increased among Students

Content	Group	N	Freq. Need	% Need	Freq. Don't need	% Don't need	p-value
Bio-statistics and basic statistics	total	517	196	37.91	321	62.09	<0.001*
	BPH	186	111	59.68	75	40.32	
	CCH	122	42	34.43	80	65.57	
	CDPH	112	18	16.07	94	83.93	
	CPT	97	25	25.77	72	74.23	
Calculus	total	517	115	22.24	402	77.76	<0.001*
	BPH	186	83	44.62	103	55.38	
	CCH	122	11	9.02	111	90.98	
	CDPH	112	3	2.68	109	97.32	
	CPT	97	18	18.56	79	81.44	
General science	total	517	164	31.72	353	68.28	<0.001*
	BPH	186	70	37.63	116	62.37	
	CCH	122	43	35.25	79	64.75	
	CDPH	112	23	20.54	89	79.46	
	CPT	97	28	28.87	69	71.13	
Computer science	total	517	270	52.22	247	47.78	0.038*
	BPH	186	100	53.76	86	46.24	
	CCH	122	51	41.80	71	58.20	
	CDPH	112	60	53.57	52	46.43	
	CPT	97	59	60.82	38	39.18	
Anatomy and Physiology	total	517	332	64.22	185	35.78	<0.001*
	BPH	186	130	69.89	56	30.11	
	CCH	122	84	68.85	38	31.15	
	CDPH	112	52	46.43	60	53.57	
	CPT	97	66	68.04	31	31.96	
Genetics	total	517	163	31.53	354	68.47	<0.001*
	BPH	186	77	41.40	109	58.60	
	CCH	122	36	29.51	86	70.49	
	CDPH	112	17	15.18	95	84.82	
	CPT	97	33	34.02	64	65.98	

Table 12 : (Cont.) Distribution of Content Needed to be Increased among Students

Content	Group	N	Freq. Need	% Need	Freq. Don't need	% Don't need	p-value
Basic professionals							
First aid	total	517	271	52.42	246	47.58	<0.001*
	BPH	186	117	62.90	69	37.1	
	CCH	122	87	71.31	35	28.69	
	CDPH	112	31	27.68	81	72.32	
	CPT	97	36	37.11	61	62.89	
Public health law	total	517	227	43.91	290	56.09	0.081
	BPH	186	76	40.86	110	59.14	
	CCH	122	51	41.80	71	58.2	
	CDPH	112	46	41.07	66	58.93	
	CPT	97	54	55.67	43	44.33	
Public health management	total	517	224	43.33	293	56.67	<0.001*
	BPH	186	97	52.15	89	47.85	
	CCH	122	40	32.79	82	67.21	
	CDPH	112	37	33.04	75	66.96	
	CPT	97	50	51.55	47	48.45	
Introduction to public health	total	517	234	45.26	283	54.74	<0.001*
	BPH	186	98	52.69	88	47.31	
	CCH	122	67	54.92	55	45.08	
	CDPH	112	31	27.68	81	72.32	
	CPT	97	38	39.18	59	60.82	
Medical jurisprudence	total	517	170	32.88	347	67.12	<0.001*
	BPH	186	98	52.69	88	47.31	
	CCH	122	44	36.07	78	63.93	
	CDPH	112	9	8.04	103	91.96	
	CPT	97	19	19.59	78	80.41	

Table 12 : (Cont.) Distribution of Content Needed to be Increased among Students

Content	Group	N	Freq. Need	% Need	Freq. Don't need	% Don't need	p-value
Mental health	total	517	186	35.98	331	64.02	0.032*
	BPH	186	66	35.48	120	64.52	
	CCH	122	55	45.08	67	54.92	
	CDPH	112	40	35.71	72	64.29	
	CPT	97	25	25.77	72	74.23	
Communicable and non-communicable diseases	total	517	234	45.26	283	54.74	0.002*
	BPH	186	102	54.84	84	45.16	
	CCH	122	57	46.72	65	53.28	
	CDPH	112	37	33.04	75	66.96	
	CPT	97	38	39.18	59	60.82	
Infectious diseases	total	517	221	42.75	296	57.25	<0.001*
	BPH	186	108	58.06	78	41.94	
	CCH	122	46	37.70	76	62.3	
	CDPH	112	37	33.04	75	66.96	
	CPT	97	30	30.93	67	69.07	
Basics of population science	total	517	92	17.79	425	82.21	<0.001*
	BPH	186	59	31.72	127	68.28	
	CCH	122	16	13.11	106	86.89	
	CDPH	112	11	9.82	101	90.18	
	CPT	97	6	6.19	91	93.81	
Public health seminars	total	517	103	19.92	414	80.08	<0.001*
	BPH	186	69	37.10	117	62.9	
	CCH	122	18	14.75	104	85.25	
	CDPH	112	10	8.93	102	91.07	
	CPT	97	6	6.19	91	93.81	
Parasitology	total	517	167	32.30	350	67.7	<0.001*
	BPH	186	82	44.09	104	55.91	
	CCH	122	44	36.07	78	63.93	
	CDPH	112	16	14.29	96	85.71	
	CPT	97	25	25.77	72	74.23	

Table 12 : (Cont.) Distribution of Content Needed to be Increased among Students

Content	Group	N	Freq. Need	% Need	Freq. Don't need	% Don't need	p-value
Public health professionals							
Nursing	total	517	232	44.87	285	55.13	<0.001*
	BPH	186	107	57.53	79	42.47	
	CCH	122	80	65.57	42	34.43	
	CDPH	112	20	17.86	92	82.14	
	CPT	97	25	25.77	72	74.23	
Family health	total	517	166	32.11	351	67.89	<0.001*
	BPH	186	75	40.32	111	59.68	
	CCH	122	61	50.00	61	50.00	
	CDPH	112	14	12.50	98	87.50	
	CPT	97	16	16.49	81	83.51	
Basic treatment	total	517	210	40.62	307	59.38	<0.001*
	BPH	186	99	53.23	87	46.77	
	CCH	122	61	50.00	61	50.00	
	CDPH	112	16	14.29	96	85.71	
	CPT	97	34	35.05	63	64.95	
Hygiene	total	517	125	24.18	392	75.82	0.281
	BPH	186	53	28.49	133	71.51	
	CCH	122	30	24.59	92	75.41	
	CDPH	112	22	19.64	90	80.36	
	CPT	97	20	20.62	77	79.38	
Nutrition	total	517	153	29.59	364	70.41	<0.001*
	BPH	186	91	48.92	95	51.08	
	CCH	122	30	24.59	92	75.41	
	CDPH	112	11	9.82	101	90.18	
	CPT	97	21	21.65	76	78.35	

Table 12 : (Cont.) Distribution of Content Needed to be Increased among Students

Content	Group	N	Freq. Need	% Need	Freq. Don't need	% Don't need	p-value
Community health	total	517	204	39.46	313	60.54	<0.001*
	BPH	186	77	41.40	109	58.60	
	CCH	122	78	63.93	44	36.07	
	CDPH	112	24	21.43	88	78.57	
	CPT	97	25	25.77	72	74.23	
Occupational health	total	517	171	33.08	346	66.92	<0.001*
	BPH	186	97	52.15	89	47.85	
	CCH	122	49	40.16	73	59.84	
	CDPH	112	10	8.93	102	91.07	
	CPT	97	15	15.46	82	84.54	
Epidemiology	total	517	189	36.56	328	63.44	0.002*
	BPH	186	85	45.70	101	54.30	
	CCH	122	40	32.79	82	67.21	
	CDPH	112	27	24.11	85	75.89	
	CPT	97	37	38.14	60	61.86	
Water sanitation	total	517	139	26.89	378	73.11	<0.001*
	BPH	186	70	37.63	116	62.37	
	CCH	122	40	32.79	82	67.21	
	CDPH	112	18	16.07	94	83.93	
	CPT	97	11	11.34	86	88.66	
Medical science	total	517	87	16.83	430	83.17	<0.001*
	BPH	186	51	27.42	135	72.58	
	CCH	122	15	12.30	107	87.70	
	CDPH	112	9	8.04	103	91.96	
	CPT	97	12	12.37	85	87.63	
Medical service	total	517	155	29.98	362	70.02	<0.001*
	BPH	186	77	41.40	109	58.60	
	CCH	122	28	22.95	94	77.05	
	CDPH	112	20	17.86	92	82.14	
	CPT	97	30	30.93	67	69.07	

Table 12 : (Cont.) Distribution of Content Needed to be Increased among Students

Content	Group	N	Freq. Need	% Need	Freq. Don't need	% Don't need	p-value
Community health planning and evaluation	total	517	137	26.50	380	73.5	<0.001*
	BPH	186	78	41.94	108	58.06	
	CCH	122	34	27.87	88	72.13	
	CDPH	112	14	12.50	98	87.5	
	CPT	97	11	11.34	86	88.66	
Maternal and child health	total	517	169	32.69	348	67.31	<0.001*
	BPH	186	72	38.71	114	61.29	
	CCH	122	55	45.08	67	54.92	
	CDPH	112	25	22.32	87	77.68	
	CPT	97	17	17.53	80	82.47	
Food sanitation	total	517	152	29.40	365	70.60	<0.001*
	BPH	186	76	40.86	110	59.14	
	CCH	122	46	37.70	76	62.3	
	CDPH	112	11	9.82	101	90.18	
	CPT	97	19	19.59	78	80.41	
Environmental sanitation	total	517	179	34.62	338	65.38	<0.001*
	BPH	186	102	54.84	84	45.16	
	CCH	122	48	39.34	74	60.66	
	CDPH	112	16	14.29	96	85.71	
	CPT	97	14	14.43	83	85.57	
Health promotion	total	517	230	44.49	287	55.51	<0.001*
	BPH	186	87	46.77	99	53.23	
	CCH	122	57	46.72	65	53.28	
	CDPH	112	36	32.14	76	67.86	
	CPT	97	50	51.55	47	48.45	
Drug addiction and alcoholism	total	517	98	18.96	419	81.04	<0.001*
	BPH	186	59	31.72	127	68.28	
	CCH	122	13	10.66	109	89.34	
	CDPH	112	12	10.71	100	89.29	
	CPT	97	14	14.43	83	85.57	

Table 12 : (Cont.) Distribution of Content Needed to be Increased among Students

Content	Group	N	Freq. Need	% Need	Freq. Don't need	% Don't need	p-value
Management for sustainable development	total	517	129	24.95	388	75.05	<0.001*
	BPH	186	73	39.25	113	60.75	
	CCH	122	26	21.31	96	78.69	
	CDPH	112	13	11.61	99	88.39	
	CPT	97	17	17.53	80	82.47	
Elderly health	total	517	122	23.60	395	76.40	0.012*
	BPH	186	59	31.72	127	68.28	
	CCH	122	25	20.49	97	79.51	
	CDPH	112	21	18.75	91	81.25	
	CPT	97	17	17.53	80	82.47	
Study of body competence	total	517	135	26.11	382	73.89	0.091
	BPH	186	60	32.26	126	67.74	
	CCH	122	31	25.41	91	74.59	
	CDPH	112	24	21.43	88	78.57	
	CPT	97	20	20.62	77	79.38	
Social, cultural and sustainable development	total	517	129	24.95	388	75.05	<0.001*
	BPH	186	80	43.01	106	56.99	
	CCH	122	19	15.57	103	84.43	
	CDPH	112	17	15.18	95	84.82	
	CPT	97	13	13.40	84	86.60	
Toxicology and industrial medicine	total	517	123	23.79	394	76.21	<0.001*
	BPH	186	66	35.48	120	64.52	
	CCH	122	21	17.21	101	82.79	
	CDPH	112	12	10.71	100	89.29	
	CPT	97	24	24.74	73	75.26	
Advise and counseling principles	total	517	149	28.82	368	71.18	0.074
	BPH	186	53	28.49	133	71.51	
	CCH	122	30	24.59	92	75.41	
	CDPH	112	28	25.00	84	75.00	
	CPT	97	38	39.18	59	60.82	

Table 12 : (Cont.) Distribution of Content Needed to be Increased among Students

Content	Group	N	Freq. Need	% Need	Freq. Don't need	% Don't need	p-value
Dental public health							
Dental anatomy	total	517	221	42.75	296	57.25	<0.001*
	BPH	186	90	48.39	96	51.61	
	CCH	122	33	27.05	89	72.95	
	CDPH	112	71	63.39	41	36.61	
	CPT	97	27	27.84	70	72.16	
Dental pathology	total	517	105	20.31	412	79.69	<0.001*
	BPH	186	47	25.27	139	74.73	
	CCH	122	9	7.38	113	92.62	
	CDPH	112	33	29.46	79	70.54	
	CPT	97	16	16.49	81	83.51	
Dental diagnosis	total	517	161	31.14	356	68.86	<0.001*
	BPH	186	44	23.66	142	76.34	
	CCH	122	18	14.75	104	85.25	
	CDPH	112	83	74.11	29	25.89	
	CPT	97	16	16.49	81	83.51	
Dental medicine	total	517	180	34.82	337	65.18	0.237
	BPH	186	62	33.33	124	66.67	
	CCH	122	38	31.15	84	68.85	
	CDPH	112	48	42.86	64	57.14	
	CPT	97	32	32.99	65	67.01	
Dental surgery	total	517	152	29.40	365	70.60	<0.001*
	BPH	186	47	25.27	139	74.73	
	CCH	122	18	14.75	104	85.25	
	CDPH	112	65	58.04	47	41.96	
	CPT	97	22	22.68	75	77.32	

Table 12 : (Cont.) Distribution of Content Needed to be Increased among Students

Content	Group	N	Freq. Need	% Need	Freq. Don't need	% Don't need	p-value
Gingivology	total	517	112	21.66	405	78.34	<0.001*
	BPH	186	53	28.49	133	71.51	
	CCH	122	10	8.20	112	91.80	
	CDPH	112	34	30.36	78	69.64	
	CPT	97	15	15.46	82	84.54	
Dental prevention	total	517	191	36.94	326	63.06	<0.001*
	BPH	186	67	36.02	119	63.98	
	CCH	122	34	27.87	88	72.13	
	CDPH	112	61	54.46	51	45.54	
	CPT	97	29	29.90	68	70.10	
Community dental health	total	517	183	35.40	334	64.60	<0.001*
	BPH	186	72	38.71	114	61.29	
	CCH	122	38	31.15	84	68.85	
	CDPH	112	61	54.46	51	45.54	
	CPT	97	12	12.37	85	87.63	
Dental sanitation	total	517	185	35.78	332	64.22	0.001*
	BPH	186	73	39.25	113	60.75	
	CCH	122	37	30.33	85	69.67	
	CDPH	112	53	47.32	59	52.68	
	CPT	97	22	22.68	75	77.32	
Dental radiation	total	517	119	23.02	398	76.98	<0.001*
	BPH	186	39	20.97	147	79.03	
	CCH	122	10	8.20	112	91.80	
	CDPH	112	63	56.25	49	43.75	
	CPT	97	7	7.22	90	92.78	
Dental public health	total	517	207	40.04	310	59.96	<0.001*
	BPH	186	96	51.61	90	48.39	
	CCH	122	44	36.07	78	63.93	
	CDPH	112	40	35.71	72	64.29	
	CPT	97	27	27.84	70	72.16	

Table 12 : (Cont.) Distribution of Content Needed to be Increased among Students

Content	Group	N	Freq. Need	% Need	Freq. Don't need	% Don't need	p-value
Pharmacy profession							
Introduction to pharmacy	total	517	344	66.54	173	33.46	0.02*
	BPH	186	116	62.37	70	37.63	
	CCH	122	82	67.21	40	32.79	
	CDPH	112	69	61.61	43	38.39	
	CPT	97	77	79.38	20	20.62	
Pharmacology	total	517	213	41.20	304	58.80	<0.001*
	BPH	186	99	53.23	87	46.77	
	CCH	122	30	24.59	92	75.41	
	CDPH	112	12	10.71	100	89.29	
	CPT	97	72	74.23	25	25.77	
Pharmacy public health	total	517	221	42.75	296	57.25	<0.001*
	BPH	186	101	54.30	85	45.70	
	CCH	122	45	36.89	77	63.11	
	CDPH	112	11	9.82	101	90.18	
	CPT	97	64	65.98	33	34.02	
Pharmacognosy	total	517	280	54.16	237	45.84	0.01*
	BPH	186	104	55.91	82	44.09	
	CCH	122	60	49.18	62	50.82	
	CDPH	112	51	45.54	61	54.46	
	CPT	97	65	67.01	32	32.99	
Drug dispensing	total	517	261	50.48	256	49.52	<0.001*
	BPH	186	90	48.39	96	51.61	
	CCH	122	44	36.07	78	63.93	
	CDPH	112	47	41.96	65	58.04	
	CPT	97	80	82.47	17	17.53	

Table 12 : (Cont.) Distribution of Content Needed to be Increased among Students

Content	Group	N	Freq. Need	% Need	Freq. Don't need	% Don't need	p-value
Drug stock management	total	517	148	28.63	369	71.37	<0.001*
	BPH	186	49	26.34	137	73.66	
	CCH	122	24	19.67	98	80.33	
	CDPH	112	14	12.50	98	87.50	
	CPT	97	61	62.89	36	37.11	
Pharmaceutical sciences	total	517	143	27.66	374	72.34	<0.001*
	BPH	186	55	29.57	131	70.43	
	CCH	122	21	17.21	101	82.79	
	CDPH	112	2	1.79	110	98.21	
	CPT	97	65	67.01	32	32.99	

* : significant difference

As presented in Table 13, most of the students agreed that printed and non-printed materials were in good condition but audio-visual instruments for non-printed materials and computers for Internet search were inadequate.

There was a significant difference in perceived agreement on the library information sources' condition among students from different educational programs. The Bachelor students of Public Health had lower perceived agreement on the following conditions: "printed materials are in good condition", "printed materials are up-to-date", "non-printed materials are in good condition" and "non-printed materials are up-to-date". The Certificate students of Pharmacy Technique had lower perceived agreement on the following conditions: "computers for Internet search are adequate" and "computers for Internet search are in good condition".

Table 13 : Distribution of Agreement on SCPH-C Library Information Resources' Condition among Students

Conditions	Group	N	Freq.	%	Freq.	%	p-value
			Agree	Agree	Disagree	Disagree	
Printed materials are in good condition	total	517	449	86.85	68	13.15	<0.001*
	BPH	186	145	77.96	41	22.04	
	CCH	122	113	92.62	9	7.38	
	CDPH	112	103	91.96	9	8.04	
	CPT	97	87	89.69	10	10.31	
Printed materials are up-to-date.	total	517	304	58.80	213	41.20	0.004*
	BPH	186	89	47.85	97	52.15	
	CCH	122	76	62.30	46	37.70	
	CDPH	112	80	71.43	32	28.57	
	CPT	97	58	59.79	39	40.21	
Non-printed materials are in good condition.	total	517	374	72.34	143	27.66	0.004*
	BPH	186	121	65.05	65	34.95	
	CCH	122	86	70.49	36	29.51	
	CDPH	112	94	83.93	18	16.07	
	CPT	97	73	75.26	24	24.74	
Non-printed materials are up-to-date.	total	517	296	57.25	221	42.75	0.003*
	BPH	186	88	47.31	98	52.69	
	CCH	122	75	61.48	47	38.52	
	CDPH	112	76	67.86	36	32.14	
	CPT	97	57	58.76	40	41.24	
Audio – visual instruments for non-printed material are adequate.	total	517	215	41.59	302	58.41	0.587
	BPH	186	71	38.17	115	61.83	
	CCH	122	50	40.98	72	59.02	
	CDPH	112	51	45.54	61	54.46	
	CPT	97	43	44.33	54	55.67	

* : significant difference

Table 13 : (Cont.) Distribution of Agreement on SCPH-C Library Information Resources' Condition among Students

Conditions	Group	N	Agree		Disagree		p-value
			Freq.	%	Freq.	%	
Audio – visual instruments for non-printed material are in good condition.	total	517	346	66.92	171	33.08	0.263
	BPH	186	122	65.59	64	34.41	
	CCH	122	75	61.48	47	38.52	
	CDPH	112	82	73.21	30	26.79	
	CPT	97	67	69.07	30	30.93	
Computers for internet search are adequate.	total	517	169	32.69	348	67.31	<0.001*
	BPH	186	56	30.11	130	69.89	
	CCH	122	42	34.43	80	65.57	
	CDPH	112	55	49.11	57	50.89	
	CPT	97	16	16.49	81	83.51	
Computers for internet search are in good condition.	total	517	294	56.87	223	43.13	<0.001*
	BPH	186	91	48.92	95	51.08	
	CCH	122	74	60.66	48	39.34	
	CDPH	112	82	73.21	30	26.79	
	CPT	97	47	48.45	50	51.55	

* : significant difference

As shown in Table 14, most of the students agreed that the light was suitable for reading, tables and chairs were adequate and comfortable, and space arrangement with book shelves was suitable.

There was a significant difference in perceived agreement on the library physical environment's condition among students from different educational programs. The BPH students had lower perceived agreement on the following conditions: “no noise disturbance, the library is quiet” and “tables and chairs are comfortable”.

Table 14 : Distribution of Agreement on SCPH-C Library Physical Environment's Condition among Students

Conditions	Group	N	Freq.	%	Freq.	%	p-value
			Agree	Agree	Disagree	Disagree	
Light is suitable for reading.	total	517	503	97.29	14	2.71	0.153
	BPH	186	177	95.16	9	4.84	
	CCH	122	120	98.36	2	1.64	
	CDPH	112	111	99.11	1	0.89	
	CPT	97	95	97.94	2	2.06	
Temperature is suitable for library use.	total	517	341	65.96	176	34.04	0.453
	BPH	186	116	62.37	70	37.63	
	CCH	122	87	71.31	35	28.69	
	CDPH	112	74	66.07	38	33.93	
	CPT	97	64	65.98	33	34.02	
No noise disturbance, library is quiet.	total	517	355	68.67	162	31.33	<0.001*
	BPH	186	104	55.91	82	44.09	
	CCH	122	90	73.77	32	26.23	
	CDPH	112	96	85.71	16	14.29	
	CPT	97	65	67.01	32	32.99	
Tables and chairs are adequate.	total	517	396	76.60	121	23.40	0.018*
	BPH	186	140	75.27	46	24.73	
	CCH	122	88	72.13	34	27.87	
	CDPH	112	98	87.50	14	12.50	
	CPT	97	70	72.16	27	27.84	
Tables and chairs are comfortable.	total	517	462	89.36	55	10.64	<0.001*
	BPH	186	152	81.72	34	18.28	
	CCH	122	114	93.44	8	6.56	
	CDPH	112	106	94.64	6	5.36	
	CPT	97	90	92.78	7	7.22	

Table 14 : (Cont.) Distribution of Agreement on SCPH-C Library Physical Environment's Condition among Students

Conditions	Group	N	Freq.	%	Freq.	%	p-value
			Agree	Agree	Disagree	Disagree	
Space arrangement between book shelves is suitable.	total	517	405	78.34	112	21.66	0.895
	BPH	186	143	76.88	43	23.12	
	CCH	122	97	79.51	25	20.49	
	CDPH	112	87	77.68	25	22.32	
	CPT	97	78	80.41	19	19.59	
Library is pleasant.	total	517	349	67.50	168	32.50	0.008*
	BPH	186	106	56.99	80	43.01	
	CCH	122	88	72.13	34	27.87	
	CDPH	112	87	77.68	25	22.32	
	CPT	97	68	70.10	29	29.90	

* : significant difference

As shown in Table 15, most of the students agreed that the library provided rapid and easy check-out services, one week and three books for one borrowing was suitable. The library provided rapid and easy information sources by searching the card system and classification of printed materials was easy for manual searching.

There was a significant difference in perceived agreement on the library service system's condition among students from different educational programs. The BPH students had lower perceived agreement on the following conditions: "the library can provide rapid and easy information sources by searching the card system", "the library can provide rapid and easy information sources searching by the computer", "the library can provide rapid and easy check-out services" and "classification of printed materials was easy for manual search.

Table 15 : Distribution of Agreement on SCPH-C Library Service System's Condition among Students.

Conditions	Group	N	Freq. Agree	% Agree	Freq. Disagree	% Disagree	p-value
The library can provide rapid and easy information sources by searching the card system.	total	517	385	74.47	132	25.53	<0.001*
	BPH	186	118	63.44	68	36.56	
	CCH	122	102	83.61	20	16.39	
	CDPH	112	88	78.57	24	21.43	
	CPT	97	77	79.38	20	20.62	
The library can provide rapid and easy information sources by searching with computers.	total	517	326	63.06	191	36.94	0.002*
	BPH	186	100	53.76	86	46.24	
	CCH	122	85	69.67	37	30.33	
	CDPH	112	82	73.21	30	26.79	
	CPT	97	59	60.82	38	39.18	
The library provides rapid and easy check-out services.	total	517	498	96.32	19	3.68	<0.001*
	BPH	186	170	91.40	16	8.60	
	CCH	122	121	99.18	1	0.82	
	CDPH	112	110	98.21	2	1.79	
	CPT	97	97	100.00	0	0.00	
Three books per one borrowing is suitable.	total	517	387	74.85	130	25.15	0.07
	BPH	186	127	68.28	59	31.72	
	CCH	122	97	79.51	25	20.49	
	CDPH	112	89	79.46	23	20.54	
	CPT	97	74	76.29	23	23.71	
One week duration per one borrowing is suitable.	total	517	429	82.98	88	17.02	0.147
	BPH	186	145	77.96	41	22.04	
	CCH	122	106	86.89	16	13.11	
	CDPH	112	95	84.82	17	15.18	
	CPT	97	83	85.57	14	14.43	
Classification of printed materials is easy for manual search.	total	517	398	76.98	119	23.02	0.002*
	BPH	186	127	68.28	59	31.72	
	CCH	122	98	80.33	24	19.67	
	CDPH	112	98	87.50	14	12.50	
	CPT	97	74	76.29	23	23.71	

* : significant difference

As shown in Table 16, most of the students agreed that the library staff was adequate for library services. The staff was friendly and enthusiastic to provide services. The staff also spoke politely and responded to enquiries rapidly and correctly.

There was a significant difference in perceived agreement on the library staff's condition among students from different educational programs. The BPH students had lower perceived agreement on the following conditions: "number of library staff is adequate for service delivering", "the library staff is enthusiastic to provide services", "the library staff respond rapidly to enquiries" and "the library staff respond correctly to enquiries".

Table 16 : Distribution of Agreement on SCPH-C Library Staff's Condition among Students.

Conditions	Group	N	Freq. Agree	% Agree	Freq. Disagree	% Disagree	p-value
Number of library staff is adequate for library services.	total	517	425	82.21	92	17.79	0.003*
	BPH	186	141	75.81	45	24.19	
	CCH	122	112	91.80	10	8.20	
	CDPH	112	89	79.46	23	20.54	
	CPT	97	83	85.57	14	14.43	
The library staff is friendly.	total	517	477	92.26	40	7.74	0.053
	BPH	186	165	88.71	21	11.29	
	CCH	122	112	91.80	10	8.20	
	CDPH	112	109	97.32	3	2.68	
	CPT	97	91	93.81	6	6.19	
The library staff speak politely.	total	517	500	96.71	17	3.29	0.084
	BPH	186	175	94.09	11	5.91	
	CCH	122	119	97.54	3	2.46	
	CDPH	112	110	98.21	2	1.79	
	CPT	97	96	98.97	1	1.03	
The library staff is enthusiastic to enquiries.	total	517	469	90.72	48	9.28	0.001*
	BPH	186	157	84.41	29	15.59	
	CCH	122	113	92.62	9	7.38	
	CDPH	112	109	97.32	3	2.68	
	CPT	97	90	92.78	7	7.22	
The library staff respond rapidly to enquiries.	total	517	454	87.81	63	12.19	0.001*
	BPH	186	150	80.65	36	19.35	
	CCH	122	107	87.70	15	12.30	
	CDPH	112	107	95.54	5	4.46	
	CPT	97	89	91.75	8	8.25	
The library staff respond correctly to the questions	total	517	471	91.10	46	8.90	<0.001*
	BPH	186	155	83.33	31	16.67	
	CCH	122	114	93.44	8	6.56	
	CDPH	112	108	96.43	4	3.57	
	CPT	97	94	96.91	3	3.09	

* : significant difference

The results from Part 7: Open-Ended Suggestions in the structured questionnaire

The suggestions could be divided into 6 aspects :

(1) Using time of library user : The respondents suggested that the library should extend service hours on Sunday.

(2) Information resources, consisting of :

(2.1) *Information resources' condition* : The respondents suggested that the books in the library should be up-to-date and those more than 10 years of use should be removed from the shelves. Furthermore, books which torn or destroyed cover should be repaired.

(2.2) *Information sources* : divided into

(2.2.1) *printed materials* : the respondents suggested that the library should increase varieties of printed materials, particularly those for recreational purpose, e.g. cartoons, sports newspapers and magazines. The varieties should cover authors as well because some contents in the library had only one author. In addition, the library should increase copies of books, increase journals by subjects, such as, dental journals and pharmacy journals, and reference books, such as, English dictionaries, Thai dictionaries and Medical dictionaries. The increase should cover English and Thai newspapers both in the number of copies and titles as well as providing the availability of famous or best seller books.

The contents : the respondents suggested that the library should increase the following subject contents; inorganic chemistry, chemistry in daily life, Japanese, Chinese, English, environmental sciences, physical sciences, anatomy and physiology

by Chusak Vetpad, up-to-date infectious diseases, medicinal plants, poetry, athletic sciences, the latest copy of National Pharmacy Act, medicinal dictionary, new technology, consumer protection, Web design, system analysis and design by Dr. Ampai Limprasertkun, web database programming, student-centered teaching, class room research, humanity and social sciences, applied psychology, sterile technique, patho-physiology, human resources development, drug manufacturing, and personality development.

(2.2.2) *non-printed materials* : the respondents suggested that the library should increase modern media, such as, VCD, CD, anatomical models, linguistic tape cassettes, E-journals and world maps. In addition the library should allow users to check-out non-printed materials.

(3) Facilities : the respondents suggested that the library should increase the number of computers for Internet search and improve the efficiency of existing computers. The library should have TV and be a subscriber of cable television. In addition, the library should increase the number of audio-visual instruments. and allow borrowing for out of library using.

(4) Physical environment : the respondents suggested that the library should increase the number of reading tables and chairs especially carrels. Reading room should be air-conditioned and book shelves should be increased for better arrangement of books and easier search. The noise problem may be solved by strictly enforcing library rules and taking the copying machine

out of the reading space. The library space arrangement should be related to types of publication and services. The library should provide a relaxing corner, with more decorations. The library should have internal rest rooms and maintain their cleanness because some respondents thought that the library was dusty.

(5) Service system : the respondents suggested that the library should make needs assessment at least twice a year, improve book shelving system and have students as helpers for book shelving. It should impose the library fee for outsiders, improve shelving and arrangement of bpk and extend the loan period to two weeks. It should also improve book search via computer and increase the number of books for one borrowing from 3 to 5 books during the examination period. It is also recommended that the library provide printing service from Internet search, increase the number of copying machines and create activities to enhance library use.

(6) Staff : the respondents suggested that the library should be careful about circulation procedure, staff should wear uniforms and they should be more friendly. Some respondents perceived that the library staff is quite slow so she should be more active and the library should put one more staff on duty.

- Results of in-depth interview 2

Some unclear suggestions from respondents in open-ended suggestion part-7 of structured questionnaire were used as a question guideline for the in-depth interview in Step 2. The findings are as follows:

Increasing computers :

There was a perceived need for increasing the number of computers because of the increasing importance of internet search and some of them were needed for report typing. There are currently only 2 computers for internet search in the library. Even though there are 40 computers in the College Computer Center, the students felt inconvenient to use them there since they are in another building, 5 minutes walk from their classroom building, whereas the library is in the same building as their classrooms. Additionally, the College Computer Center service hours are at the same time as the students' attending their classes. As a consequence, using the library computers is more convenient for them.

Increasing contents :

The meaning of increasing content was actually increasing Thai textbooks.

Variation of books :

There were two meanings of variation of books. The first one was increasing the number of magazines for recreational purposes. The second one was variation of authors or publishers for some subject areas, such as, industrial health sciences and industrial medical sciences because all of these subject areas in the library were published by Sukhothai Thammathirat Open University.

Searching information sources :

The students felt that searching information sources was still problematic because they couldn't find required books on shelves despite being listed on the cards or on computer. The main cause was the books being misplaced when returning to the shelves. Some students took the books out of the shelves and then put them back on the

wrong places. The library therefore should develop a better and more efficient circulation system.

Library decoration:

Some students felt that the library decoration should include more green trees, good quotations or saying the walls, colorful flowers in the jars, a globe model and maps, anatomical models, and a relaxing corner with Japanese style tables and small cupboards with recreational books.

4.3 Results by Key Performance Indicators

The results are concluded and categorized by the Key Performance Indicators in the following table.

4.4 Results of Step-3: Select Needs

The results of step-1 and step 2 were put into panel consensus of the LDC and the results of discussion as detailed below.

Using time of library users:

The results show that users do not use the library much on weekends. However, SCPH-C is currently conducting a Bachelor Degree of Public Health continuing course- a special version. Students taking up this course are required to study on Saturdays and Sundays. Consequently the library hours should be extended on Sunday from 8.30 to 20.00 hrs. Serving students of this special program also benefits other students of other regular programs in terms of library use.

Information resources:

- *Information sources:*

Course related subject areas:

Students would like to see an increase of Thai textbooks (36.9%) because, for certain subjects, they felt that there were not enough Thai books in the library.

General books:

The users needed the library to increase some printed materials on general textbooks (74.51%) because they wanted to learn more besides their lessons in the classroom.

Recreational books:

They also requested additional reading books for recreational purposes (67.38%) because these would help them to spend their free time creatively and recreationally.

Non- printed learning resources:

For non- printed material the users wanted the library to increase more VCD (60.96%) and they should be allowed to check them out for external use. Nevertheless, their main objective was a need for entertainment.

Anatomical models (47.24%) should be lent to use as a reference in anatomy and physiology subjects for better understanding.

Maps and pictures (41.35%) should be allowed to be taken out of the library, particularly parasite pictures to use as reference in Parasitology subject because they have to see the parasite specimens and write down the names correctly for examination.

- Content area :

For this aspect, teachers wanted the library to increase the contents that were the areas of their expertise only. So the consensus panel decided that the criterion to be considered should be the concerned student groups divided into the various curricula because there is some differentiation in the nature of each curriculum.

The panel decided to consider the percentage of perceived needs among students on Thai language content areas. In considering students' percentage, each program was given an equal priority. To arrive at prioritization of feasible needs the following scheme was applied.

Scoring perceived needs:

- The maximum score on needs was 66.5%.
- The minimum score on needs was 13.5%.
- The range was $66.5 - 13.5 = 53$.
- The mid-point between 66.5 and 13.5 was $53/2 + 13.5 = 39.5$.
- Therefore, the Library Development Committee agreed to use $\geq 30\%$ in one given curriculum as 1 content score.

Thus the scoring of content needs was applied as follows:

Table 17: Results by Key Performance Indicators

Index	KPI	Target Standard	Results	Method		
				Library inventory	Library record	Survey
Information resources	<u>Printed material</u>					
	<ul style="list-style-type: none"> • % of books published after 1992 	<ul style="list-style-type: none"> • 50% 	<ul style="list-style-type: none"> • 76% (12,840) of books published after 1992 	✓		
	<ul style="list-style-type: none"> • No. of books by priority curriculum subjects 	<ul style="list-style-type: none"> • 5 publications per subject 	<ul style="list-style-type: none"> • 9 subjects out of 79 have less than 5 publications 	✓		
	<ul style="list-style-type: none"> • No. of Thai Journals by curriculum fields or disciplines 	<ul style="list-style-type: none"> • Minimum 1 per discipline 	<ul style="list-style-type: none"> • Every discipline has a Thai journal 	✓		
	<ul style="list-style-type: none"> • No. of English Journals by curriculum fields or disciplines 	<ul style="list-style-type: none"> • Minimum 1 per discipline 	<ul style="list-style-type: none"> • Every discipline has an English journal 	✓		
	<ul style="list-style-type: none"> • No. of copies for top-100 frequency used books 	<ul style="list-style-type: none"> • Minimum 3 copies 	<ul style="list-style-type: none"> • Top-100 popular books have more than 3 copies 	✓	✓	✓
	<ul style="list-style-type: none"> • Condition of books 	<ul style="list-style-type: none"> • 100% hard covers 	<ul style="list-style-type: none"> • 20% hard covers 	✓		

Table 17: (Cont.) Results by Key Performance Indicators

Index	KPI	Target Standard	Results	Method		
				Library inventory	Library record	Survey
	<u>Non-printed material</u>					
	• No. of non-printed material sources by priority curriculum subject with demand for demonstration or learning assistance	• Minimum 1 per subject with demand for demonstration or learning assistance	• Lack of anatomical model	✓		✓
Facilities	• No. of computers for internet search	• 2 computers in the library and 70% user agreement on number of computers	• 2 computers for Internet searching in the library and 33.33% user agreement	✓		
	• No. of computers for library information sources searching	• 1 computer in the library	• 1 computers for information sources searching in the library	✓		
	• Condition of computers	• 70% user agreement on condition of computers	• 56.51% user agreement			✓
	• No of computers with less than 5 years of use	• All computer ≤ 5 years	• every computer is older than 5 years but were up graded	✓		

Table 17: (Cont.) Results by Key Performance Indicators

Index	KPI	Target Standard	Results	Method		
				Library inventory	Library record	Survey
Physical environment	• No. of instruments for non-printed materials	• 1 instrument per each type of existing non-printed materials and 70% user agreement on number of instruments	• 1 instrument per each type of existing non-printed materials and 41.00% user agreement	✓		
	• Condition of instruments for non-printed materials	• 70% user agreement on condition of instruments	• 65.95% user agreement			✓
	• Light	• 70% user agreement	• 97.33% user agreement			✓
	• Noise	• 70% user agreement	• 69.16%user agreement			✓
	• Temperature	• Air conditioner for reading space	• No air conditioner for reading space	✓		
	• No. of table and chair	• 70% user agreement	• 65.24% user agreement	✓		
		• Minimum 25% of No. of users and 70% of user agreement	• 18% of No. of user (104 seats : 561 persons)and 77.54% user agreement	✓		

Table 17: (Cont.) Results by Key Performance Indicators

Index	KPI	Target Standard	Results	Method		
				Library inventory	Library record	Survey
Service	• Condition of table and chair	• 70% user agreement	• 89.30% user agreement			✓
	• Space decoration	• 70% user agreement	• 67.20% user agreement			✓
	• Type of service	• Library standard consisting of reading, self-learning room, circulation, Inter-library loan, enquiry and search assistance	• Cover library standard service but no one uses Inter Library Loan	✓		
	• Service condition	• 70% user agreement	• 85.02% user agreement			✓
	• Manual searching	• 70% user agreement	• 76.65% user agreement			✓
	• Search by card system	• 100% information sources coverage	• Didn't cover non-printed materials	✓		✓
	• Computer search	• 70% user agreement	• 74.69% user agreement	✓		✓
		• 100% information sources coverage	• Didn't cover non-printed materials	✓		✓
		• 70% user agreement	• 63.81% user agreement	✓		✓

Table 17: (Cont.) Results by Key Performance Indicators

Index	KPI	Target Standard	Results	Method		
				Library inventory	Library record	Survey
Staff	• No. of staff	• Academic library standard consists of 1 manager, 1 librarian and 2 assistants	• Didn't have librarian assistant	✓		
	• Staff manner	• 70% user agreement	• 81.64% user agreement	✓		
	• Service preparation	• 70% user agreement	• 94.92% user agreement			✓
		• 70% user agreement	• 90.08% user agreement			✓

Scoring subject :

Subject scores were based on the application of subjects to curricula. If a subject is taught in one curriculum, it receives 1 score. If taught in 2 curricula, it receives 2 scores and so on.

Table 18 : Scoring content needs

No. Student program	% Perceived Needs	Score	Priority level
1 student program	≥ 30%	1	4
2 student programs	≥ 30%	2	3
3 student programs	≥ 30%	3	2
4 student programs	≥ 30%	4	1

Thus scoring of subject is applied as follows:

Table 19 : Scoring of subject

No. of Curriculum having content	Score	Priority level
Taught in 1 curriculum	1	4
Taught in 2 curricula	2	3
Taught in 3 curricula	3	2
Taught in 4 curricula	4	1

The numbers of Thai textbooks are used for consideration because students prefer them to English ones. The numbers of books in Table 19 are those that are under 10 years of publication.

Number of books for consideration:

The LDC panel consensus set a minimum number of books by using the needs score \times subject score \times 5 publications per subject \times 3 copies per publication. The source of 5 publications per subject and 3 copies per publication came from Key Performance Indicator of the library (page -17).The standard used for priority decision to extend the number of books was the consideration on perceived needs scores, subject being taught scores and minimum number of books, as shown in the following table.

Table 20 : Criteria for content need prioritization

Perceived Needs Scores	Subject Scores	Number of Books	Priority Level
4	4	< 240	1
4	3	<180	1
4	2	<120	1
4	1	<60	1
3	4	<180	2
3	3	<135	2
3	2	<75	2
3	1	<45	2
2	4	<120	3
2	3	<90	3
2	2	<60	3
2	1	<30	3
1	4	<60	4
1	3	<45	4
1	2	<30	4
1	1	<15	4
0	4	<15	4
0	3	<15	4
0	2	<15	4
0	1	<15	4

The results are shown in Table 21.

Table 21 : Prioritization of content needed to be increased.

Contents	Needs scores	Subject scores	No. of books	Priority level
Communicable and non-communicable diseases	4	4	100	1
Public health law	4	4	127	1
Pharmacognosy	4	4	154	1
Health promotion	4	4	157	1
Computer science	4	4	196	1
Anatomy and Physiology	4	4	220	1
General psychology	4	4	221	1
English linguistics	4	4	229	1
Thai linguistics	4	4	355	-
Public health management	4	4	3755	-
Dental medicine	4	1	19	1
Drug dispensing	4	1	30	1
Infectious diseases	4	1	52	1
General law	4	1	130	-
Intoduction to pharmacy	4	1	133	-
Health	4	1	165	-
Quality of life development	4	1	183	-
Education	4	1	233	-
Epidemiology	3	4	51	2
First aid	3	4	87	2
General chemistry	3	4	152	2
Human and environment	3	4	225	-
Dental public health	3	2	52	2
Mental health	3	2	108	-
Basic treatment	3	2	263	-
Dental sanitation	3	1	11	2

Table 21 : (Cont.) Prioritization of content needed to be increased.

Contents	Needs scores	Subject scores	No. of books	Priority level
Pharmacy public health	3	1	22	2
Genetics	3	1	23	2
Dental prevention	3	1	51	-
Community dental health	3	1	51	-
Biology	3	1	140	-
Introduction to public health	3	1	221	-
Community health	2	4	40	3
Physics	2	4	121	-
Pharmacology	2	4	135	-
Biostatistics and basic statistics	2	4	271	-
Family health	2	2	60	-
Maternal and child health	2	2	89	-
Information systems for management	2	2	150	-
Water sanitation	2	2	163	-
Environmental sanitation	2	2	174	-
Occupational health	2	2	219	-
Medical services	2	1	3	3
Pharmaceutical sciences	2	1	22	3
Parasitology	2	1	25	3
Dental anatomy	2	1	31	-
Medical jurisprudence	2	1	76	-
Food sanitation	2	1	80	-
General science	2	1	109	-
Nursing	2	1	127	-
Economy	1	4	173	-
Basics of population science	1	1	3	4
Public health seminars	1	1	4	4
Community health planning and evaluation	1	1	6	4

Table 21 : (Cont.) Prioritization of content needed to be increased.

Contents	Needs scores	Subject scores	No. of books	Priority level
Gingivology	1	1	20	-
Dental radiation	1	1	20	-
Dental pathology	1	1	21	-
Drug stock management	1	1	21	-
Advise and counseling principles	1	1	25	-
Dental surgery	1	1	25	-
Dental diagnosis	1	1	31	-
Management for sustainable development	1	1	41	-
Elderly health	1	1	42	-
Toxicology and Industrial medicine	1	1	55	-
Social, cultural and sustainable development	1	1	81	-
Study of body competence	1	1	97	-
Drug addiction and alcoholism	1	1	115	-
Organic chemistry	1	1	120	-
Calculus	1	1	120	-
Political science	1	1	140	-
Philosophy and religion	1	1	150	-
Nutrition	1	1	211	-
Thai politics	0	4	1	4
Ethics	0	4	2	4
Hygiene	0	4	165	-
Geography	0	1	4	4
Library using	0	1	110	-
Principles of public relations	0	1	152	-
Medical science	0	1	186	-

Purchase of books was divided into 2 buying plans. First and second priorities were put into the first buying plan, while the third and the fourth priorities were put into the second buying plan. The selected contents of each plan are shown in table 22.

Table 22 : The content selection.

The first buying plan	The second buying plan
1. Communicable and non-communicable diseases	1. Community health
2. Public health law	2. Medical service
3. Pharmacognosy	3. Pharmaceutical sciences
4. Health promotion	4. Parasitology
5. Computer science	5. Basics of population science
6. Anatomy and physiology	6. Public health seminars
7. General psychology	7. Community health planning and evaluation
8. English linguistics	8. Thai politics
9. Dental medicine	9. Ethics
10. Drug dispensing	10. Geography
11. Infectious diseases	
12. Epidemiology	
13. First aid	
14. General chemistry	
15. Dental public health	
16. Dental sanitation	
17. Pharmacy public health	
18. Genetics	

Library work assessment:

There was a commitment for library work related to EQA and Library Standard that the library development committee must take into consideration. If the condition could not pass the 50% agreement, it is considered the first priority problem. If it is a 50%-69.99% agreement, it is considered the second priority problem. If it could pass the 70% agreement, it is considered satisfactory for the year 2003.

When considering the library work in terms of information resources and facilities' condition, physical environment condition, service system condition, and library staff condition, it was found that:

- Information resources and facilities' condition:

The first priority problems were computers for Internet search and audio – visual instrument for non- printed materials. They were both insufficient in number.

The second priority problems were printed and non- printed materials which were not up-to-date. Existing computers for internet search and audio - visual instruments for non- printed materials were not in good condition.

- Physical environment condition:

There was no first priority problem in this aspect. The second priority problems were temperature and noise. The temperature was not suitable for reading in the library and it was also noisy. Furthermore, the library did not look pleasant and orderly.

- Service system condition:

There was no first priority problem for this aspect but the second priority problem was the library could not provide rapid and easy information sources through computer search.

- Library staff condition:

There were no first or second priority problems but there was a suggestion that it will be better if the library had more staff members because they will not be over-occupied and can be more proactive in library development.

Needs selected for library work:

First priority problems of SCPH-C library are computers for Internet search and audio – visual instrument for non – printed materials which are inadequate in number and are not in good condition. The most important request from users is increasing of some contents and some information sources for both printed and non– printed materials as explained above.

Second priority problems of SCPH-C library are printed and non- printed materials. They are not up-to-date, physical environment is facing high temperature, there should be more decoration and there is perceived noise disturbance. Further the library cannot provide rapid and easy information sources by searching through computer because of inadequate of computers and there is no circulation. The physical environment problems of the library are that the temperature is too hot and it is also noisy at times. There should be more decorations so that the atmosphere will be more conducive to reading and using the library. Furthermore, the library cannot provide easy and rapid information sources via computer search due to inadequate number of the computers. In addition, the circulation system is relatively unsystematic.