

3 Cs to Learning: The Thammasat University Libraries experience

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3Cs TO LEARNING: THE THAMMASAT UNIVERSITY LIBRARIES EXPERIENCE

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Abstract

One mission of the Thammasat University Libraries is to make information accessible to all. The policy known as 3Cs to Learning supports this goal, focusing on connectivity, collaboration and correctness. We will discuss the 3Cs concept at Thammasat University in terms of the innovative plagiarism software MyCat, an application for checking duplicates in student dissertations, theses, and reports as well as staff papers. Correctly checking Thai script is a key requirement in this cutting-edge product, since the Thai language has its own characters and has not been as globalized as have other major languages.

MyCat is software for checking information correctness. It provides connectivity between university standards and actual data to be distributed among libraries for collaborative sharing. Using it, Thammasat collaborated with the National Electronics and Computer Technology Center (NECTEC), a division of the National Science and Technology Development Agency. NECTEC implemented the software, using Thammasat University dissertation work flows, developing and suggesting groundbreaking ways to demonstrate this powerful plagiarism software to the public as a practical benefit to society.

This collaboration is an example of a library using local, lower-cost products with more effective impact on the local academic scene. Ideally in the future, widespread collaboration among Thai universities for checking duplicates may extend to the regional level for the purpose of data sharing. To develop into an effective tool, one essential requirement is that it opens a pathway to new learning.

Keywords: Active learning, Thammasat University, Plagiarism, MyCat, Thailand

Biographical Note

SRICHAN CHANCHEEWA has served as director of Thammasat University Libraries since 2006. She started her career at the Thammasat University Libraries in 1976 after graduating from the Department of Library Science, the Faculty of Liberal Arts, Thammasat University. Srichan holds a master's degree in library sciences from Emporia State University, Kansas, USA. She chaired the 2011 Thai Academic Libraries Organizing Committee, the nerve center of Thailand's many collaborative library activities and also chaired 2014 OCLC Asia Pacific Executive Committee.

CHOOCHART HARUECHAIYASAK received his Ph.D. degree from the Department of Electrical and Computer Engineering, University of Miami, in 2003. After receiving his degree, he has worked as a researcher at the National Electronics and Computer Technology Center (NECTEC), National Science and Technology Development Agency (NSTDA). His current research interests include data and text mining, natural language processing, information retrieval and data management. One of his objectives is to promote R&D works through IT applications for government offices and business sectors in Thailand. He is also a visiting lecturer at several universities in Thailand.

ABOUT THAMMASAT UNIVERSITY

On June 27, 1934, Thammasat University was officially opened at Tha Phrachan on Rattanakosin Island alongside the Chao Phraya River. Professor Doctor Pridi Banomyong, the University's founder, originally called Thammasat "The University of Ethics and Politics," reflecting its primary mission to offer higher education in law and politics to prepare Thai people for a new democratic system of constitutional monarchy. Striving to make higher learning accessible to all, Thammasat started as an open university with 7,094 students enrolled during its first academic year. Thammasat University has since evolved from an open university for law and politics to a prestigious international scholarly institution offering all levels of academic degrees and producing cutting-edge research across a broad spectrum of academic disciplines. The University has graduated more than 300,000 students who have greatly contributed to the progress and development of Thailand and the wider world. Notable Thammasat University alumni include former prime ministers, leading politicians and government officers, Bank of Thailand governors, Supreme Court judges, provincial governors, as well as internationally recognized experts in many different fields.

INTRODUCTION TO THE THAMMASAT UNIVERSITY LIBRARIES

The Thammasat University Libraries are an academic support unit of Thammasat University, Thailand's second oldest university.

In 1934, Thammasat's first library was established simultaneously with the founding of the university. In 1976, the library attained the status of an independent office, the first such status for a library in Thailand. All its branches were thereafter centralized under the administration of the Thammasat University Library System. At this time, the system included the central and departmental libraries for the faculties of law; commerce and accountancy; political science; economics; social administration; sociology and anthropology; journalism and mass communication; and the Institute of Thai Studies.

When the university expanded to the Rangsit campus in Pathum Thani, the library system expanded as well. 1986 saw the founding of the Rangsit Campus Library, followed by the Faculty of Medicine Library in 1991 and the Puey Ungphakorn Library (Rangsit Campus) in 2002.

The expansion continued as the university added campuses in Lampang and Pattaya. Founded in 1997, the Lampang Campus Library was not integrated into Thammasat's larger library system until 2004. The Pattaya Campus Library was established in 2006 and integrated shortly thereafter.

As of 2015, Thammasat University Libraries is a group of eleven libraries located on four campuses of Thammasat University, the largest centralized university library in Thailand. Currently the Libraries hold over 1,140,000 books, 49,000 audio-visual materials, 3,600 printed journals, 34,000 electronic journals, 15,000 electronic theses, 2,100 digitized rare books, and 27 newspaper titles. It serves more than 40,000 patrons on these campuses. Document delivery is extensively used to transfer library resources among campuses.

In 2015 academic year, Thammasat University set a goal for students' competency as helping students to develop into "GREATS" and details are as follows:

G – Global Mindset

Encouraging students to learn in multidisciplinary areas to expand their horizons and prepare them to be global citizens.

R - Responsibility

Thammasat learning and teaching must adhere to accuracy, ethics and social responsibility. Curriculums, courses and teaching must cultivate ethical content. Action must be based on all aspects of good governance.

E – Eloquence

Thammasat students must be able to communicate effectively.

A – Aesthetic Appreciation

Learn and appreciate the arts, literatures, and music.

T – Team Leader

Thammasat students must be able to fill the role of team leader.

S – Spirit of Thammasat

Thammasat University is well known as the university of freedom, where faculty, students, and staff are encouraged to freely express ideas and opinions in a communal spirit. This skill encourages students to be proud members of the university community.

As a support unit of the university, one mission of the Thammasat University Libraries is to make information accessible to all. The library functions as part of the students' learning process. Thammasat University Libraries reconsider their strategic plan according to the university goals and focus on the 3Cs for Learning.

3Cs FOR LEARNING AT THE THAMMASAT UNIVERSITY LIBRARIES

The 3Cs to Learning policy focuses on connectivity, collaboration and correctness.

Connectivity : Students must connect specialized information sources, and see connections between fields, ideas, and concepts. Connecting specialized information sets, the connections enable students to learn more. The learning process is driven by the understanding that decisions are based on a diversity of opinions.

Collaboration : A collaborative learning method will be developed at Thammasat University at a new building : the “Krom Luang Naradhiwas Rajanagarindra Learning Centre” connected to the library. It will provide a space for students from different faculties, schools and disciplines to team up to explore significant questions and create meaningful projects. Students from different schools working together on a shared assignment will create effective collaborative learning at Thammasat University.

Correctness : The learning process will focus on student knowledge and confidence in their own abilities. Students should be able to state what they believe to be correct answers to their inquiries. They express such confidence in answers. Students should be aware of the originality of their research, papers and reports as one factor of correctness. “Originality” is a prerequisite for learning value.

In terms of overall perspective, the 3Cs to Learning can be summarized as follows:

1. Knows how to connect specialized information sets.
2. Learns to collaborate.
3. Shows how to create with “originality”.

This article will focus on correctness according to “originality” to describe the innovative plagiarism software MyCat, an application for checking duplicates in student dissertations, theses, papers and reports. Even though, Thammasat University subscribes to Turnitin, the Thomson Reuters products for plagiarism checking, we still require a local software for plagiarism since checking Thai script is a key requirement for this cutting-edge output.

MyCat is software for checking information correctness. It provides connectivity between university standards and actual data to be distributed among libraries for collaborative sharing. Using it, Thammasat collaborated with the National Electronics and Computer Technology Center (NECTEC), a division of the National Science and Technology Development Agency. NECTEC implemented the software, using Thammasat University dissertation work flows, developing and suggesting groundbreaking ways to demonstrate this powerful plagiarism software to the public as a practical benefit to society.

Thammasat University requests that starting in 2015, students must submit their theses to MyCat and the library must provide sufficient learning classes to support the process.

MYCAT SUBMISSION PROCESS: PROBLEMS, ISSUES AND SOLUTIONS

The previous thesis submission process

The traditional process of submitting thesis documents at the Thammasat University is carried out in a manual manner. Figure 1 shows the flow chart diagram of the traditional thesis submission process. The process begins by a student submits hard copies of the thesis draft to his/her advisor and committee members. The student will then give a public defense of the thesis with the committee. Upon passing the oral examination, the student will make any revision and submit the final version of the thesis document to committee for approval. Each of the committee members will sign on the approval page. The student will then submit a hard copy of thesis document with CD-ROM containing the digital version with all related files to the library for indexing and keeping on the book shelf.

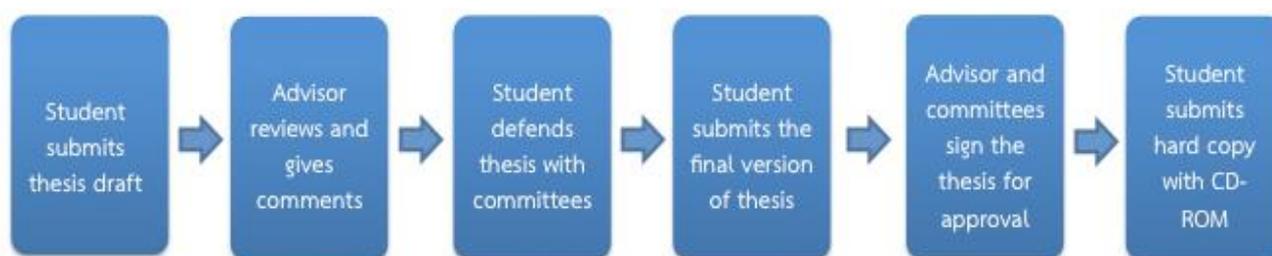


Figure 1: Previous thesis submission process

There are several problem issues occur with the traditional thesis submission approach. The problems could be summarized as follows.

- (1) The content in the hard copy and the soft file do not match.
 - Soft file was missing some parts of the contents, e.g., chapters, figures, tables.
 - Soft file was edited with a different software or a different version, therefore could not be opened by the librarians.
 - Soft file was not the thesis document, but a paper in proceedings or journals.
- (2) The soft file could not be opened due to the damage of CD-ROMs.
 - To digitize and index the thesis document, librarians may solve the problem by scanning the hard copy. This process results in a scanned document which could not be perfectly converted to text by the Optical Character Recognition (OCR) programs.

The proposed thesis submission process

To help solve the problems related to the previous thesis submission process, we have proposed a solution using a management system for copyrighted and thesis documents called MyCat. MyCat is designed as a web-based application which can be conveniently accessed by web browsers. Figure 2 illustrates the proposed process of thesis submission supported by MyCat. The process begins by a student submits the thesis draft in PDF file format to the system. The thesis file will then be sent to the CopyCat module for plagiarism checking. CopyCat is a tool designed to perform the plagiarism detection in the submitted document file. CopyCat will perform text analysis and report all text segments which are suspicious for copy-and-paste style plagiarism. Once the thesis draft is checked for plagiarism, his/her advisor will log in to the system, view the results and give the comments. With the advisor's approval, the student will give a public defense of the thesis with the committee. Upon passing the oral examination, the student will make any revision and submit the final version of the thesis document to MyCat for plagiarism checking. The advisor and all committee members will sign on the approval page. The student will then register the final version of the thesis by uploading the final version and inputting all metadata.

All the steps mentioned above are carried out online, therefore the process could be tracked and monitored for any problem. Another benefit includes the plagiarism checking process provided by the system, therefore, could help thesis advisors detect any copy-

and-paste plagiarism. The submission of digital thesis document also helps guarantee the contents in the thesis file are the correct final version for indexing and retrieval.

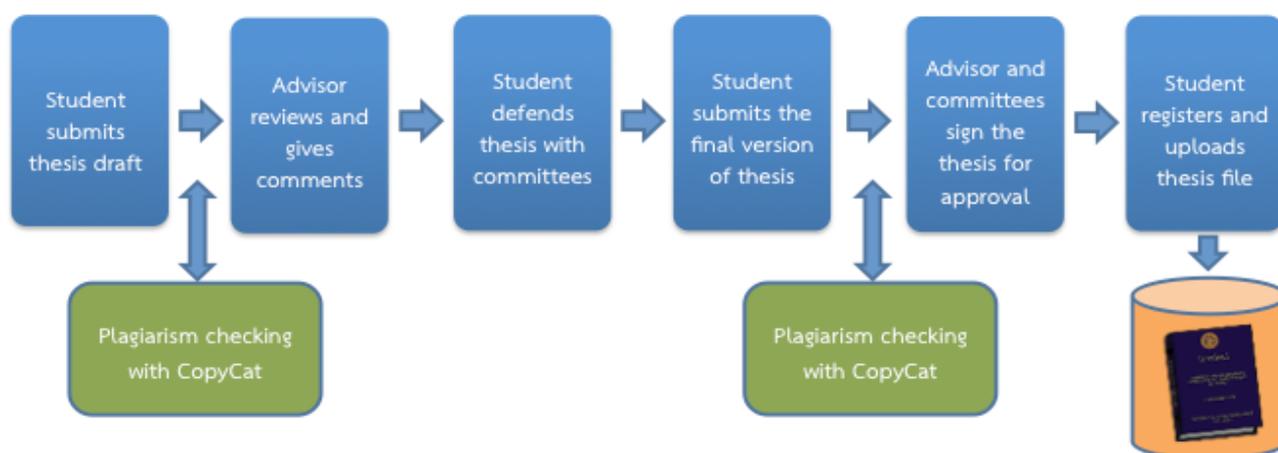


Figure 2: Proposed thesis submission process using MyCat

THE SYSTEM DESIGN OF MYCAT

MyCat applies several techniques from natural language processing, text mining and information retrieval. MyCat uses a word segmentation program to tokenize Thai texts. The tokenized texts are used to construct a search index for full-text retrieval task. Another important technique applied in MyCat is text similarity analysis. To detect plagiarized texts in submitted thesis draft, MyCat uses the sliding window technique to obtain the overlapped text chunks. Each text chunk is used to perform a phrase query from the search index to detect similar text segments. Highly similar text segments are considered very suspicious for copy-and-paste plagiarism. Text similarity analysis is used to calculate the similarity score between an input text chunk and the queried text segment from the index. MyCat will generate a summary report of suspicious document sources ranked by the number of highly similar text segments.

MyCat is designed to support four user groups as follows:

(1) Administrators: The assigned administrators are librarians. The responsibility of the administrators includes creating and managing departments and staffs. The administrators can also monitor all the submission activities in the system including viewing the statistics of submission status and plagiarism checking reports.

(2) Staffs: The staffs are persons who are responsible for administering course registration of the academic programs at academic departments. In MyCat, staffs create and manage dissertation courses, add faculty members and students into each course. The staffs can also monitor all the submission activities for each course created.

(3) Faculty members: In MyCat, faculty members are thesis advisors of the students who registers for dissertation courses. Faculty members can view the student's thesis files including the plagiarism checking report and make comments. The faculties have authorities in approval or disapproval of the submitted thesis files based on the plagiarism checking reports.

(4) Students: In MyCat, students have responsibility to submit his/her thesis draft for plagiarism checking process which occurs in two phases: before the thesis defense and afterwards. After passing the examination, the student must register the final version of thesis file by inputting all related metadata which include title in both Thai and English, abstract and keywords.

As mentioned above, the thesis submission process involves many steps which are managed through the MyCat system. Figure 3 illustrates the task management among four user

groups. The process begins with the department staff creates a thesis or dissertation coursework and adds faculty members and students into the coursework. The faculty members and students who were added into the system will be notified via emails. Each student will submit his/her own thesis draft file into the system. The submitted file will be checked for plagiarism by the CopyCat module. The faculty member who is the advisor of the student will log into the system to view the plagiarism checking report. The faculty member can approve or disapproval the thesis submission based on the plagiarism checking and other judgment. If the submission is approved, the student will then be allowed to defend his/her dissertation. After the examination, the student will submit the revised thesis file for second plagiarism checking process. The advisor will then view the plagiarism checking report for final approval. The last step involves the student registers and submits the final approved thesis file and inputs all the metadata into the system. The staffs and administrators can monitor all steps in the process including viewing the plagiarism checking statistics.

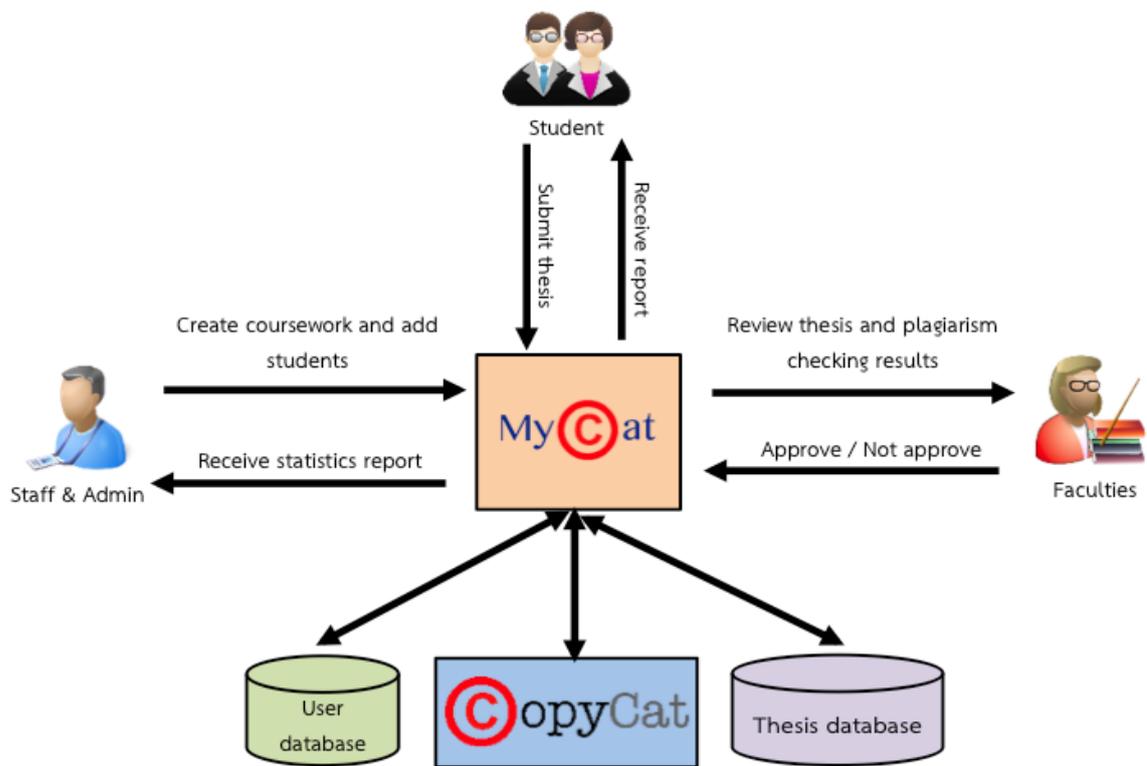


Figure 3: User roles and task management

Embedding MyCat in the Learning Process

Since the university's announcement in August 2014, the Libraries have provided 70 tutorial courses at every faculty on requests or by classes volunteered by the library. 934 students, 95 faculty members and 180 staff members attended the sessions.

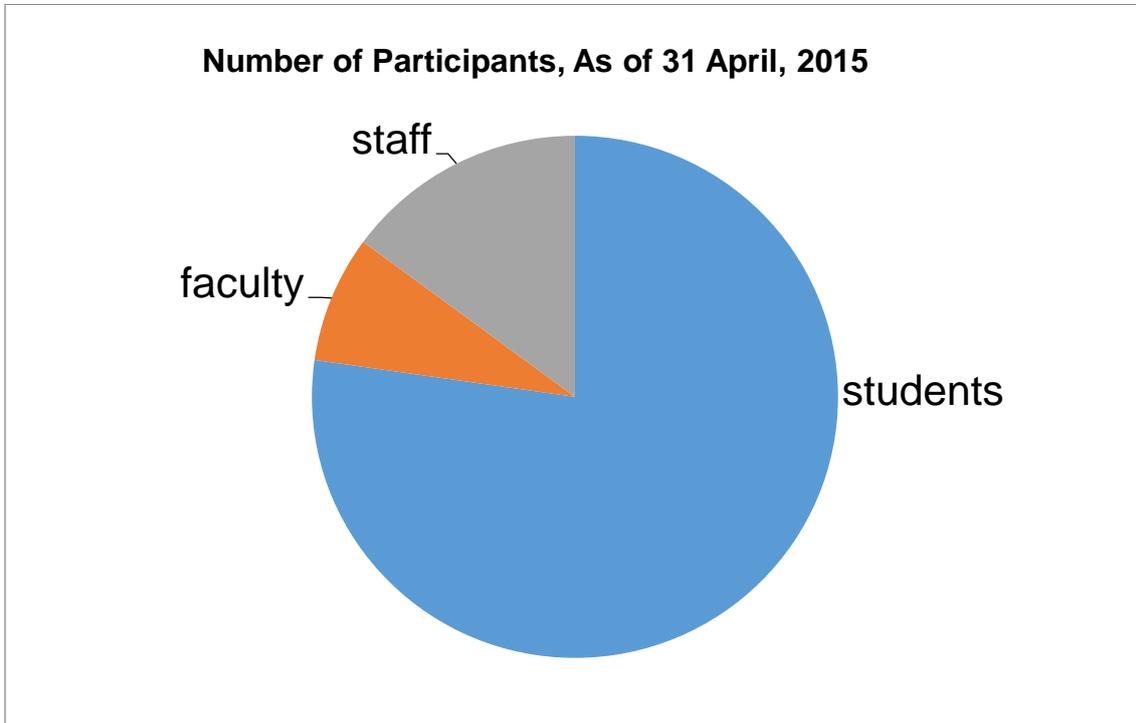


Table 1: Numbers of Participants

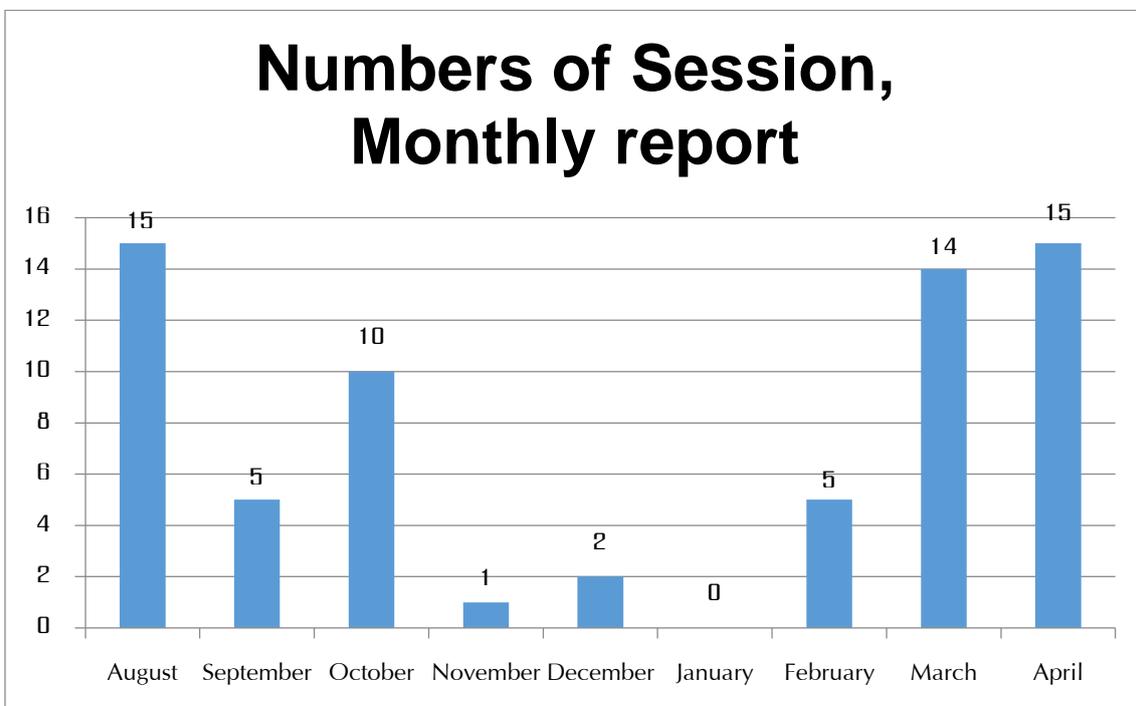


Table 2: Numbers of Sessions

Numbers of Participants, distributed by University Campus

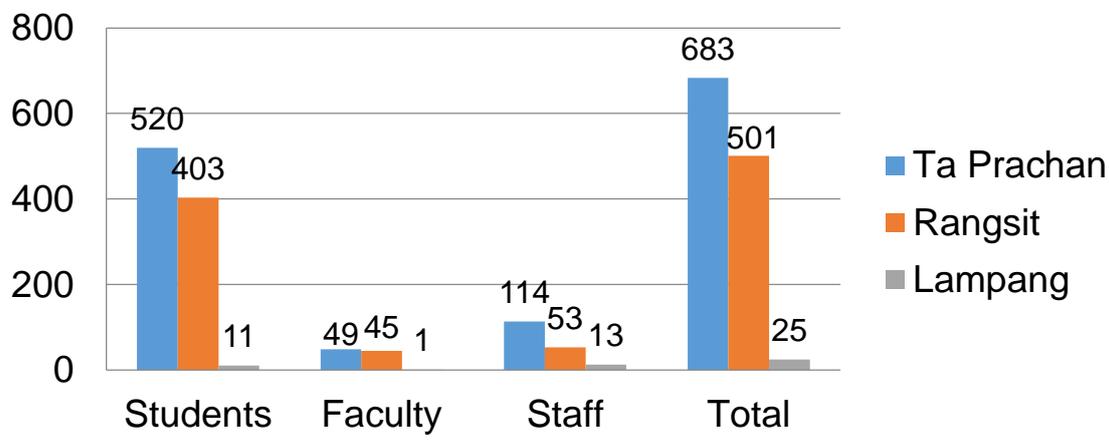


Table 3: Participants Distributed by University Campus

During sessions, questions arose which needed answers to clarify the processes. All questions were gathered and posted on the MyCat website at mycat.library.tu.ac.th for further reference.

Lessons Learned

Lessons learned from the implementation process of MyCat at Thammasat University are as follows:

1. Even though the library preserved printed versions of university theses, the library staff have limited knowledge about thesis procedures and problems involved. This is an important opportunity for library staff to be part of the academic process and work as student research support.
2. Previously, the thesis submission process at Thammasat University was done by faculty staff with limited control by the university administration. MyCat reorganizes the process, making it possible to be tracked and monitored online.
3. The library must train its staff for this new approach. Librarians must study the thesis manual, template, process and software before each class. This is a big step in professional development and will significantly impact library professionals. Previously at Thammasat University Libraries, theses were a concern for one to five librarians. Henceforth the libraries must train at least 12 to 15 librarians for this task. This is a major knowledge management commitment for library staff. A MyCat community of practice (COP) was launched in June, 2014 to share and learn together.

We still are in the ongoing process of learning and sharing the 3Cs here at Thammasat with our partners, especially, NECTEC to develop a better learning society. Next we plan to evaluate the process, improve its quality and report on new social developments.