

Virtual Reference in an Academic Environment: Quantitative and Qualitative Analysis of Users' Information Needs and Information-Seeking Behavior

Toby Faber, Rowena Li, Jeanne Holba Puacz, Wendy Stephens
Interdisciplinary Ph. D. Program, SLIS
University of North Texas

Overview

This study

- Examined the usage patterns and service effectiveness of virtual reference services in an academic library
- Quantitatively analyzed both live chat and email reference questions to map peak usage times, usage patterns, question types and response times
- Quantitatively and qualitatively studied 100 sample reference questions
- Qualitatively examined the process of 4 reference interviews through complete transcripts
- Qualitatively analyzed an online patrons' satisfaction survey

Overview

The results of this study

- are applicable to all academic libraries
- have practical implications for staffing and training
- offer recommendations for service improvement

Introduction

Virtual Reference

- Technologically enabled reference service
- Communicate with library reference staff without being physically present
- Online communication channels, such as chat, IM, email

Introduction

The University of North Texas

- Serves more than 31,000 students
- Offers more than 400 distance class sections each semester via eCampus
- Spring 2005, web-based instruction counted for 26% of the course taught
- Five libraries

Introduction

The University of North Texas Libraries

- In-person reference desk services
- Telephone reference services
- Online live chat reference services
- Email reference services

Introduction

UNT Libraries Service Hours

1. Email Reference

- 7 days and 24 hours
- Response within 24 hours during a working day

2. Online Chat Reference

- Mon – Thurs 10 am – 8 pm
- Friday 10 am – 5 pm
- Sat. 2 pm – 5 pm
- Sun. 1 pm – 5 pm

Introduction

The screenshot shows a Microsoft Internet Explorer browser window with the address bar displaying <http://www.library.unt.edu/genref/help.htm>. The page title is "UNT Libraries, Reference & Information Services: Ask A Librarian: Reference assistance at the U". The main content area is titled "Ask a Librarian: Reference Assistance at the UNT Libraries". On the left, there is a sidebar with the UNT Libraries logo and a list of links: "UNT Libraries Home", "Resources for Library Research", "Library Services", "Exhibits & Collections", "About the Libraries", "New & Noteworthy", "Quick Links", "UNT Library Catalog", "Electronic Resources", "Library Services for UNT Off-Campus Users", "Help", "Ask a Librarian", "How Do I Begin?", "How to Find Books & Articles", "Site Map", and "Search This Web Site". The main content area lists several services with "brief overview" links: "Reference Desks", "E-Mail Reference", "General Reference Questions", "Government Information Questions", "Reference by Phone", "Reference by Appointment", and "Online Reference Help Desk". On the right, there is a section titled "ONLINE REFERENCE HELP DESK" with a link to "Ask a librarian for help in real time, using chat room technology." Below this is a section titled "SPRING SEMESTER HOURS" with a list of hours: "Monday - Thursday 10:00 AM - 8:00 PM", "Friday 10:00 AM - 5:00 PM", "Saturday 1:00 PM - 5:00 PM", and "Sunday 1:00 PM - 4:50 PM". At the bottom of this section is a button labeled "ENTER".

UNT Libraries, Reference & Information Services: Ask A Librarian: Reference assistance at the U - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Refresh Print Mail News RSS Feeds

Address <http://www.library.unt.edu/genref/help.htm> Go

UNIVERSITY of NORTH TEXAS LIBRARIES

UNT Libraries Home
Resources for Library Research
Library Services
Exhibits & Collections
About the Libraries
New & Noteworthy

Quick Links

UNT Library Catalog
Electronic Resources
Library Services for UNT Off-Campus Users

Help

Ask a Librarian
How Do I Begin?
How to Find Books & Articles
Site Map
Search This Web Site

Ask a Librarian: Reference Assistance at the UNT Libraries

- [Reference Desks](#)
[brief overview](#)
- [E-Mail Reference](#)
[brief overview](#)
[General Reference Questions](#)
[Government Information Questions](#)
- [Reference by Phone](#)
[brief overview](#)
- [Reference by Appointment](#)
[brief overview](#)
- [Online Reference Help Desk](#)
[brief overview](#)

ONLINE REFERENCE HELP DESK

[Ask a librarian for help in real time, using chat room technology.](#)

SPRING SEMESTER HOURS

NEW SPRING HOURS!

Monday - Thursday
10:00 AM - 8:00 PM
Friday
10:00 AM - 5:00 PM
Saturday
1:00 PM - 5:00 PM
Sunday
1:00 PM - 4:50 PM

ENTER

- [Reference Desks](#)
The UNT Libraries consist of several different buildings

Internet

Research Questions

1. What is the general information-seeking behavior for patrons of a large academic library using virtual reference services?
2. What are the information needs of those patrons using virtual reference services?
3. To what extent have those patrons' information needs been met?
4. What improvements, if any, of the virtual reference services would enhance the patrons' information-seeking experience and provide a higher quality of customer service?

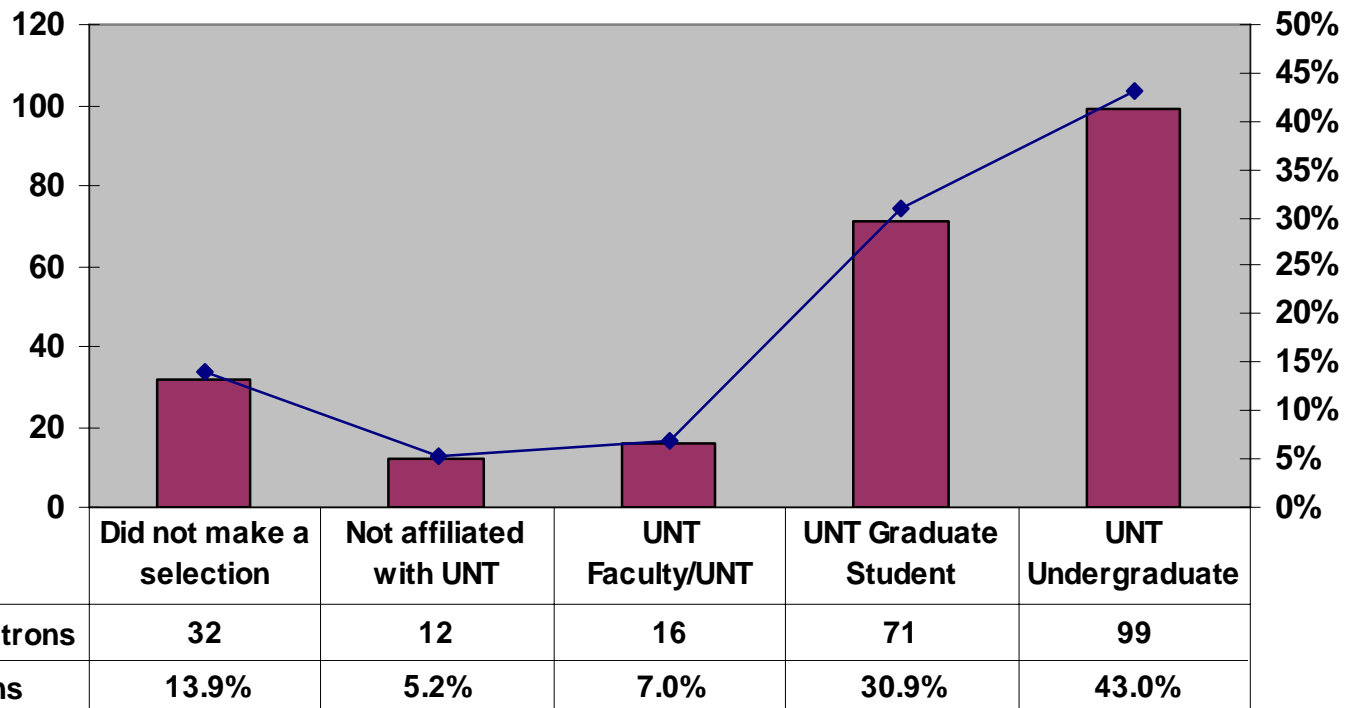
Methodology

<i>Data Collected</i>	<i>Time Frame</i>	<i>Types of Analysis</i>
Statistical reports of email and chat services	1/17/2005 – 5/6/2005	quantitative
100 sample reference questions from email and chat	6/15/2005 – 6/30/2005	quantitative
Transcripts of 4 full text reference transactions	5/17/2005 – 7/7/2005	qualitative
Online patron satisfaction survey	1/17/2005 – 5/6/2005	quantitative

Findings

UNT patron status for live chat reference, 1/17/2005-5/6/2005.

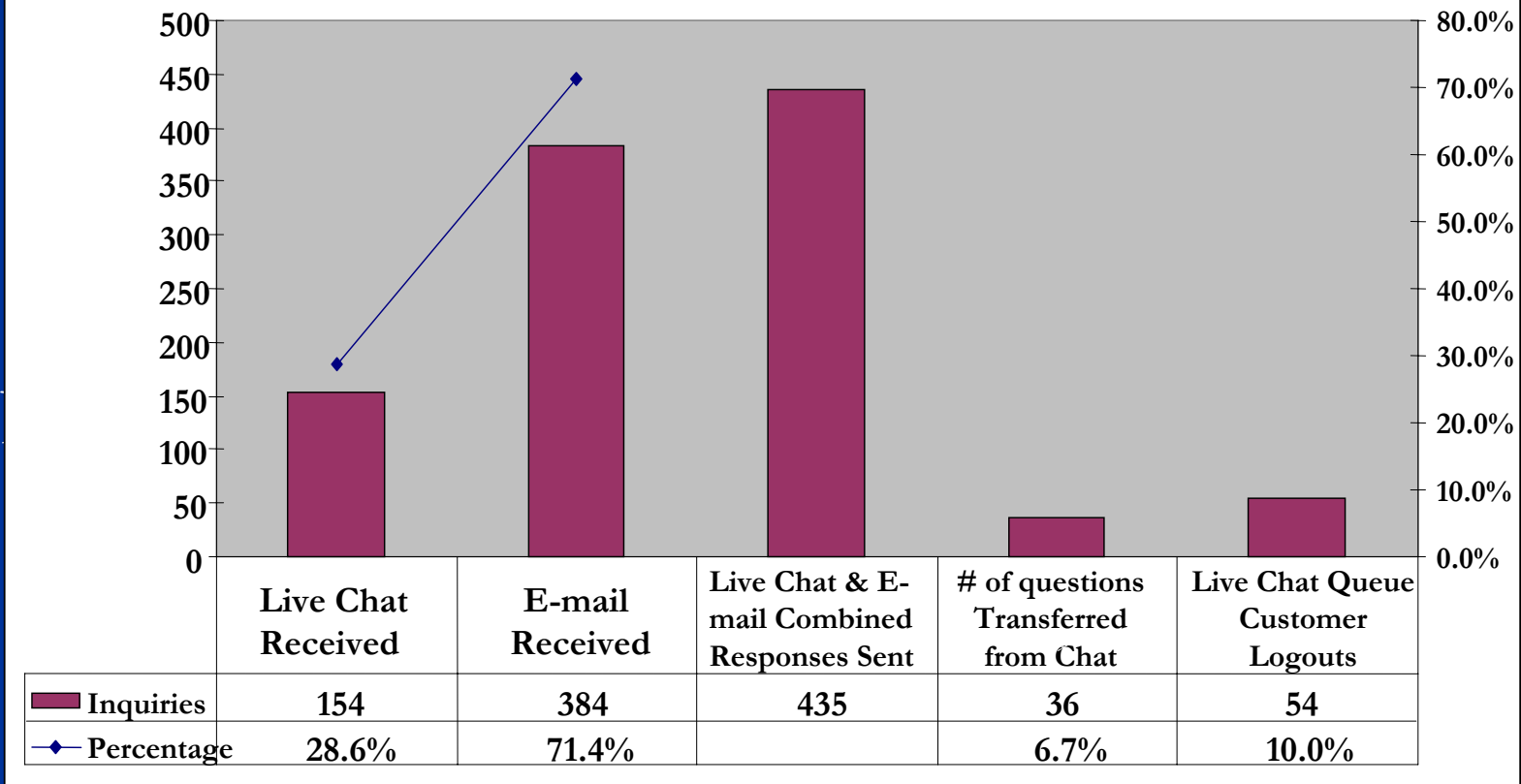
**Patron Login In Parameters - UNT Status
(Live Chat only)**



Findings

Patrons use more *email* service than *live chat* service

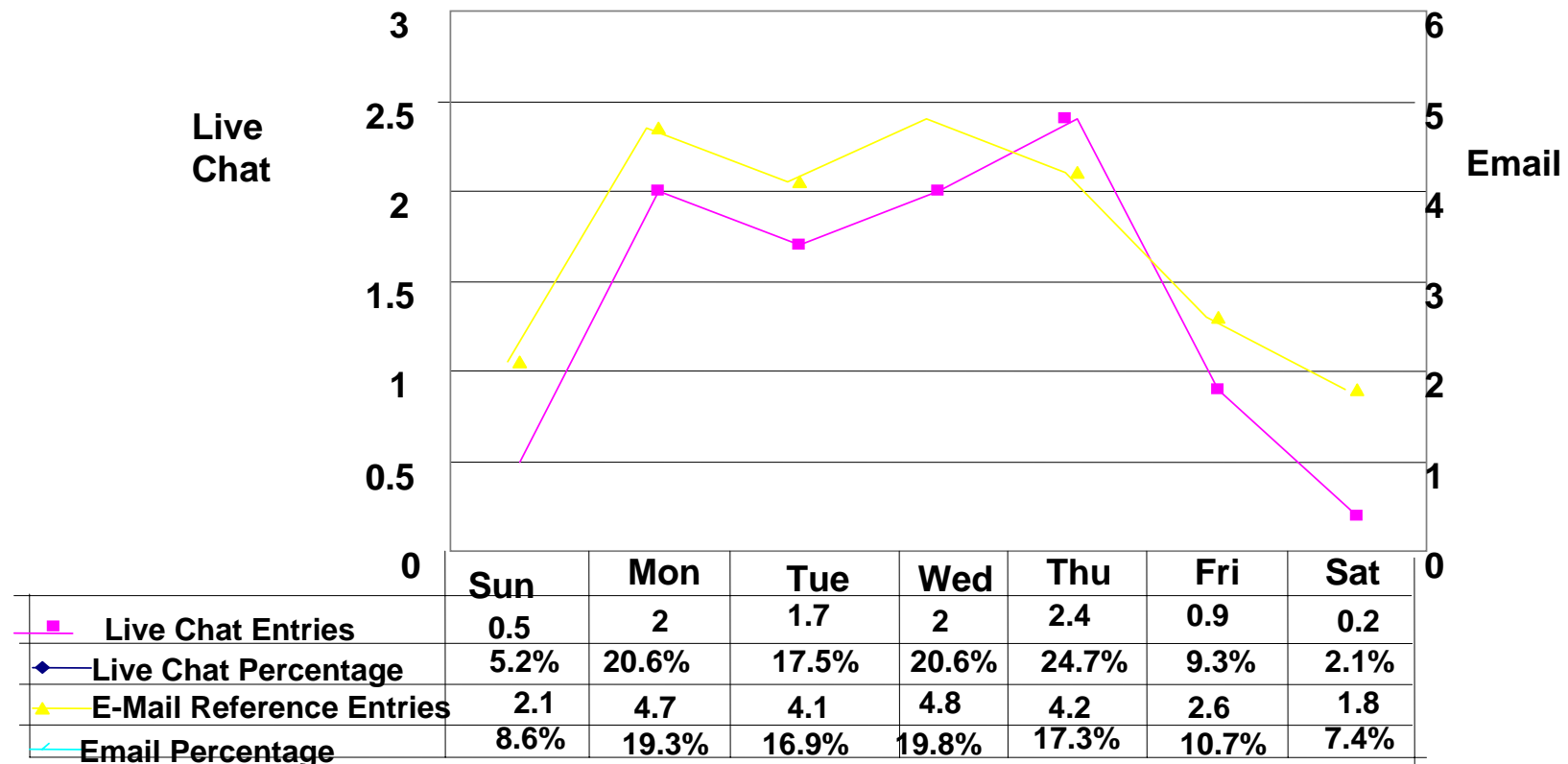
Total Inquires & Responses: 1/17/05 to 5/6/05



Findings

Patrons tend to use email and live chat services more frequently from Mondays to Thursdays

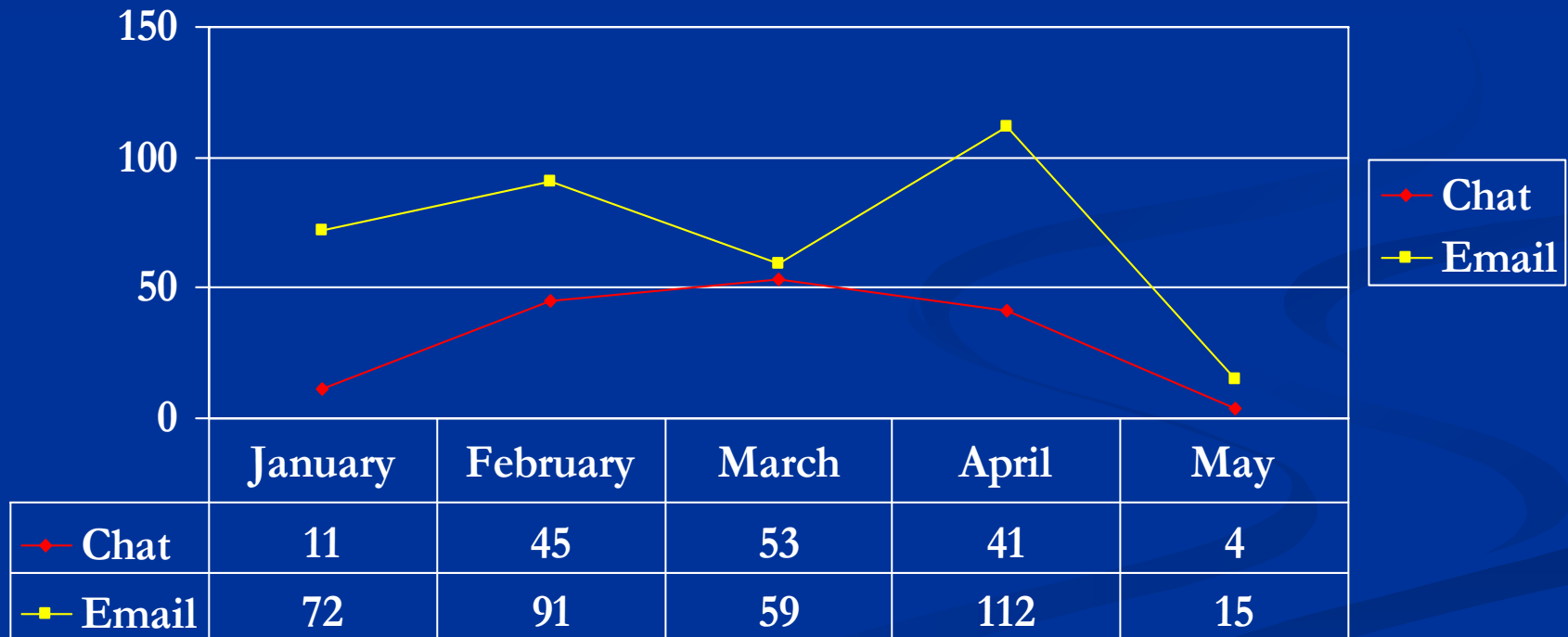
Average number of entries, by days of week: 1/17/05 to 5/6/05



Findings

**March has the most inquires for live chat and
April for email**

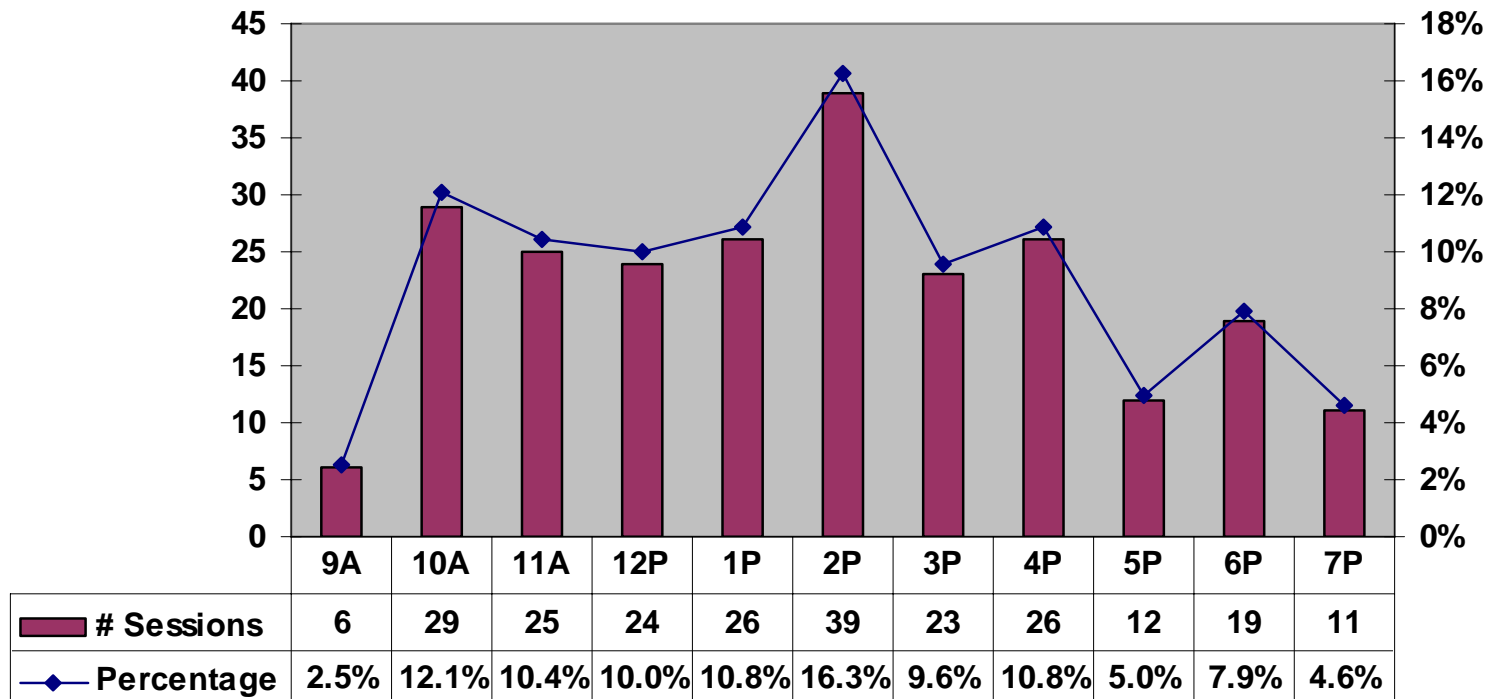
Number of Entries Received by Month



Findings

Patrons tend to use live chat inquiries more often from 10 am to 4 pm daily

Number of sessions for all days in interval:
1/17/05 to 5/6/05 by hour of day (Live Chat only)



Findings

100 sample reference questions

1 – Reference-related:

- Ready Reference
- Specific Search
- Research Request
- Bibliographic
- Literature Search

2 – Policy & Procedural

- e.g., library policy type questions, hours, renewal, passwords, etc.

3 – Directional

- e.g., where is the library? Etc.

Findings

4 – Technology Assistance

- e.g., sign on to database assistance
- e.g., help using a browser

5 – Other Library Services

- ILL (Inter-library Loan) requesting materials or to set up an ILL account
- Remote/ storage request – Needs materials from remote storage or another UNT library
- Reserve Materials

Findings

6 – Equipment/Facilities

- Anything to do with using some type of equipment in the library

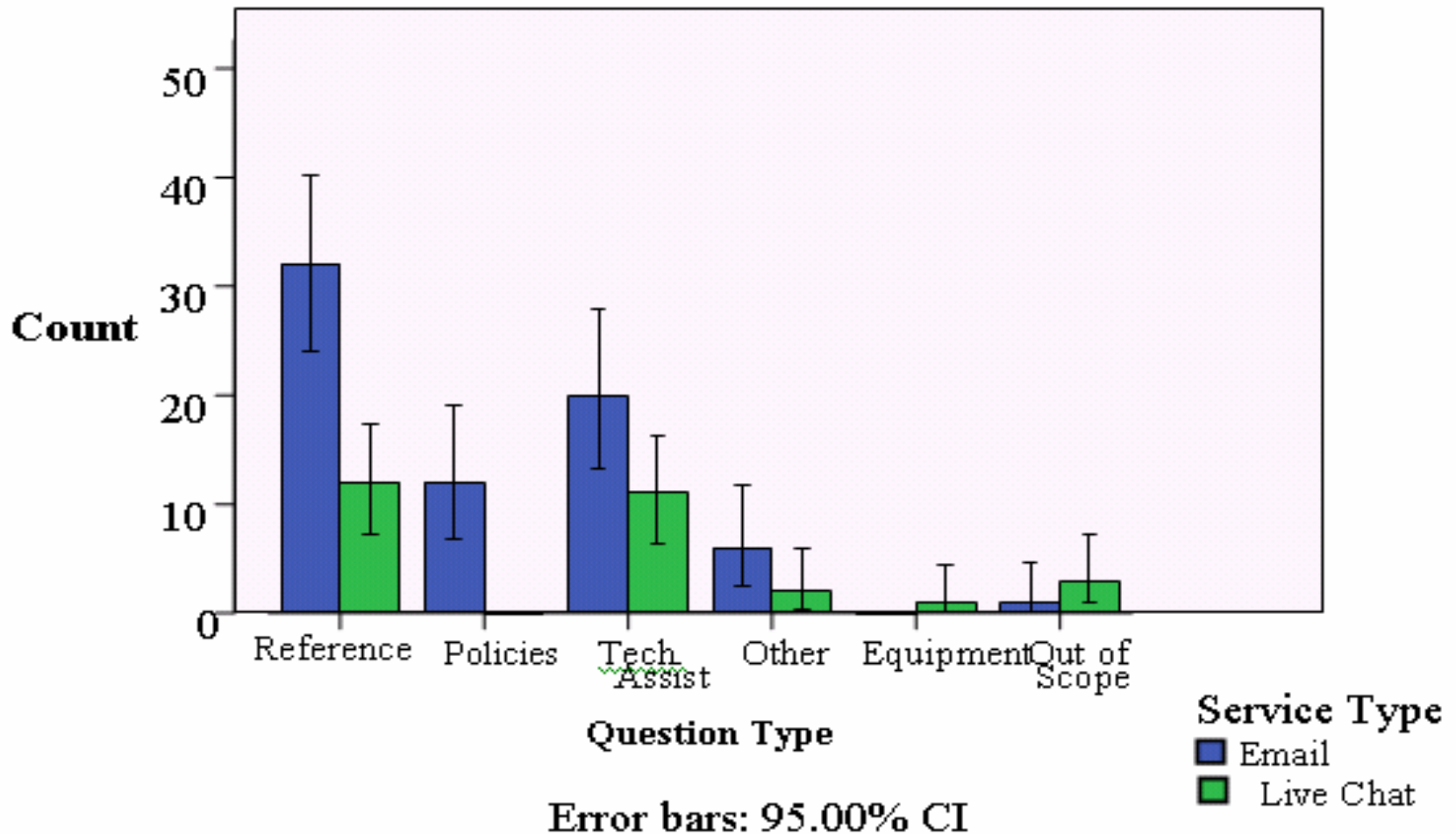
7 – Out of Scope

- e.g., wants legal, tax, or medical advice

8 – Complaints

Findings

Types of questions asked in email and chat



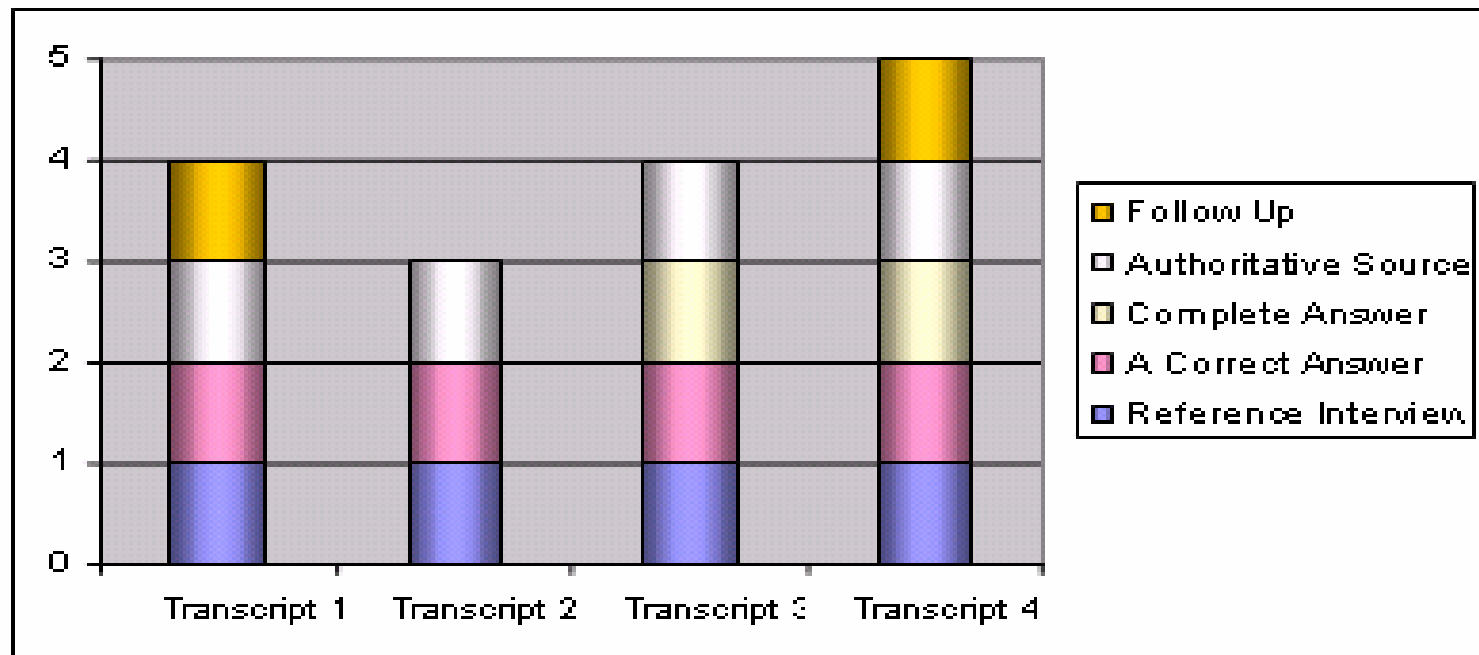
Findings

89.5% of live chat questions and 86.46% of email questions are answered

	Live Chat	Email
New	0	0
In Process	0	2
Pending Patron Input	1	6
Closed- Answered	128	332
Closed-Partially Answered	12	6
Closed-Unanswered	12	6
New-Transfer	0	0
Closed-Transferred	1	32
TOTAL	154	384

Findings

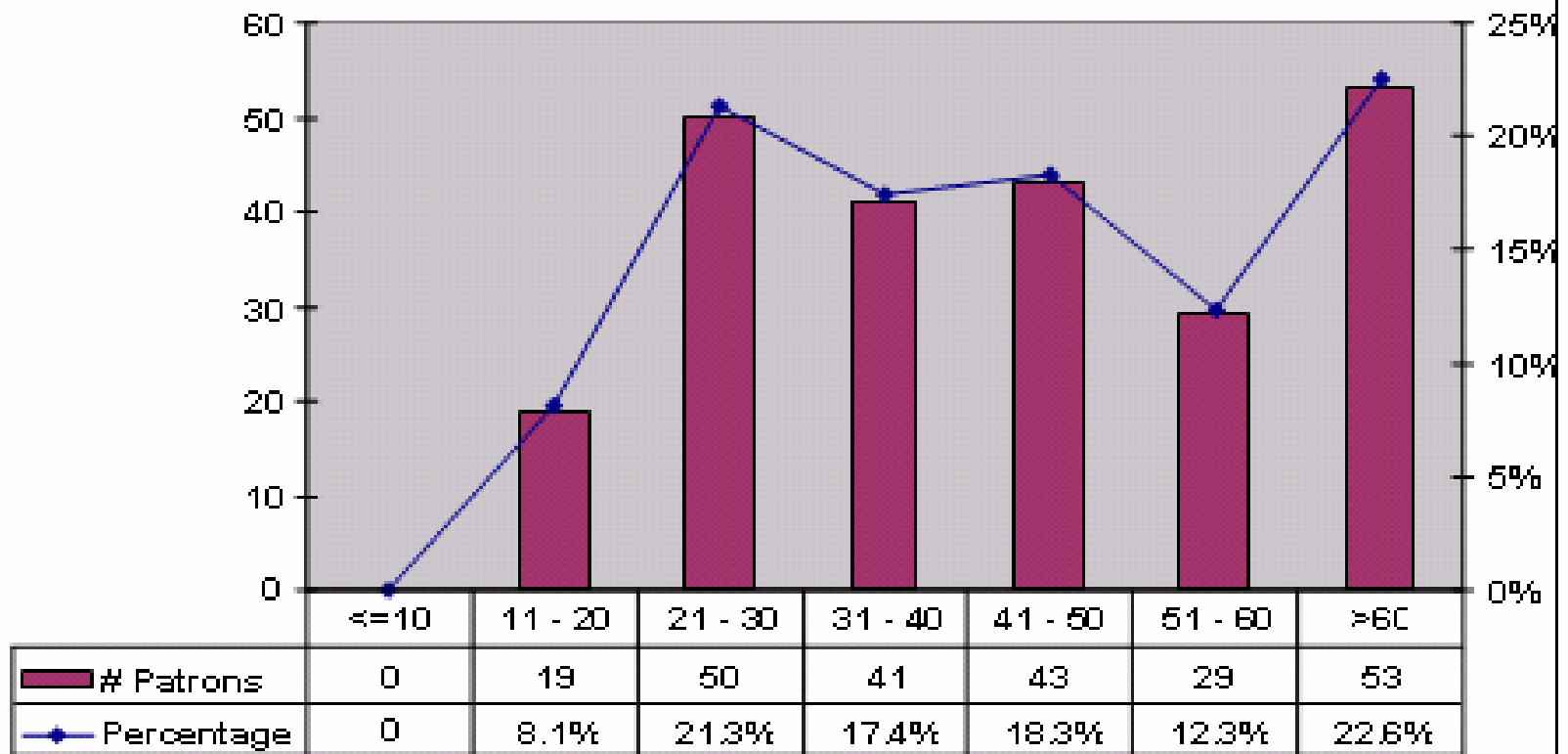
A study of the four reference interview transcripts indicates increased efficiency and service may be realized by providing more comprehensive answers and utilizing a series of follow-up questions



Findings

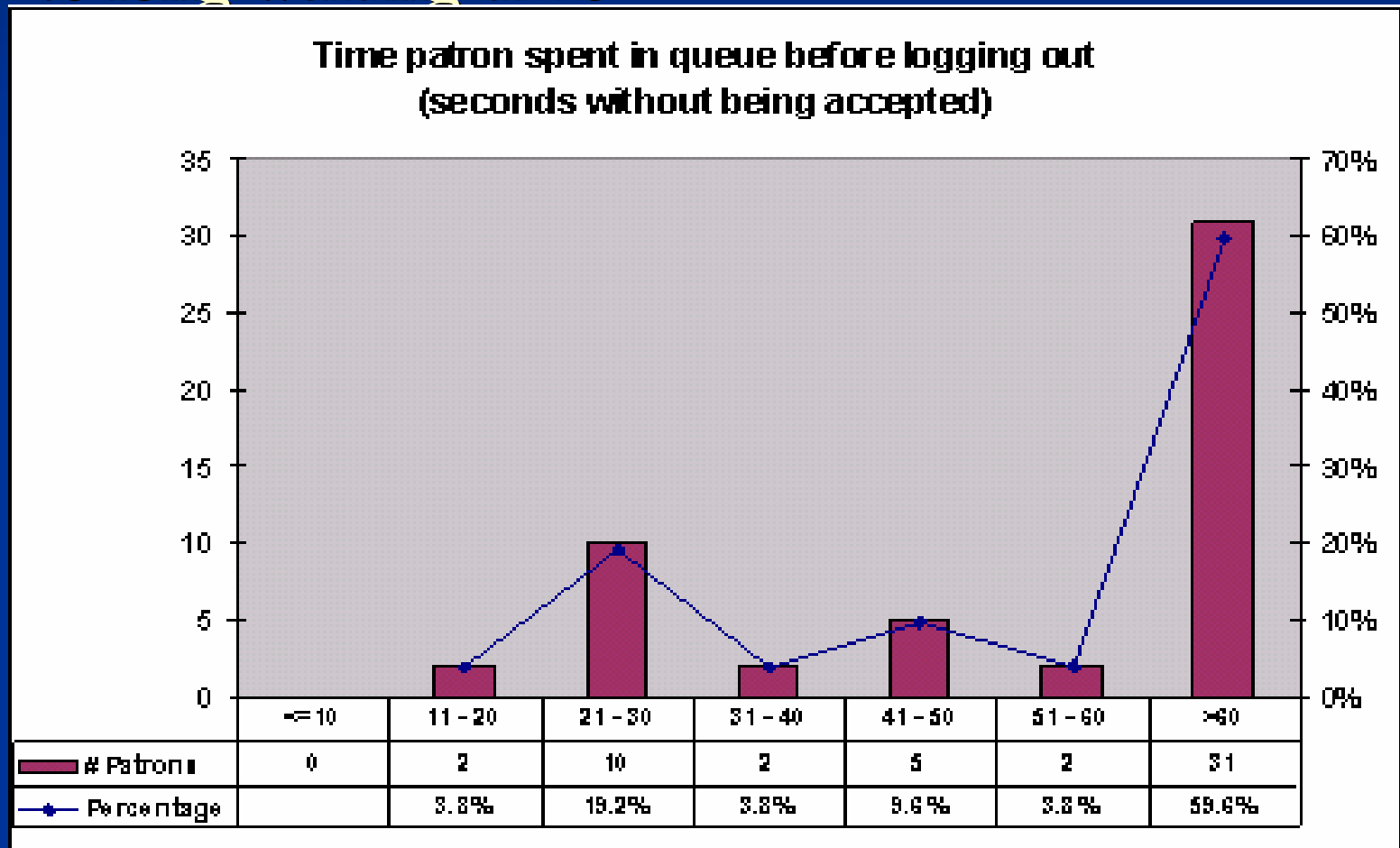
Patrons' median waiting time in the queue for live chat is between 41 to 50 seconds

Time patron spent in queue for live chat before being accepted (seconds)



Findings

The main reason for queue logouts in live chat is due to long waiting time



Findings

- 89.1% inquiries from live chat and 75.15% inquiries from email are completed within 6 hours
- 45.96% of the responses to live chat reach the patrons within 1 hour
- The result of online survey shows that Overall, over 80% of the patrons are satisfied with the virtual reference service provided by UNT libraries and over 95% of the patrons would use the service again in the future.

Suggestions

- More complete answers and the use of follow-up questions should be encouraged in the reference interview
- Shorter waiting periods in online chat could reduce the drop-off rate (10%)
- Additional staffing during busy periods and times of the day might decrease the response time lag

Limitations

- The study covers the period of 1/17/2005 to 5/6/2005, statistics may vary in other semesters
- The study was designed after the data were collected by the university library
- The full transcripts of reference interviews for this study is small

Further Research

- IM virtual reference services at academic institutions
- Blog

Acknowledgement

The authors would like to thank the UNT Libraries Reference Department for providing the data used in this study and analysis.