

Purpose: This exploratory study attempts to retrospectively examine the impact of changes to library facilities on user perceptions of the facilities and services of Holland and Terrell Library at Washington State university from 2003 to 2012, as evidenced by the results of LibQual+ Library as Place questions. The intent is to develop a methodology that can be fruitfully applied to analyze LibQual+ data for a retrospective analysis of changes when no direct assessment was conducted at the time of implementation, in order to better target future efforts on improving perceptions of service quality.

Design/Methodological Approach: A one-way analysis of variance was conducted, using survey year as the grouping variable, on Perceived, Adequacy Gap, and Superiority Gap for all valid responses for all Library as Place questions and for the means of all Library as Place responses. Follow-up post-hoc analyses using the Games-Howell test were conducted to identify significant mean differences.

Findings: Results of the one way ANOVA of the mean of all responses to Library as Place questions showed a difference in Superiority Gap significant at the .05 level (p = 0.0112). For the individual questions, a statistically significant difference at the 0.05 level was found for the Superiority Gap of questions LP03 and LP08. Post-hoc analysis using the Games-Howell test identified Superiority Gap values on question LP03 ("Library space that inspires study and learning") as having statistically significant changes between 2003 and 2006 (p<0.02), and 2003 and 2012 (p<0.04). This analysis also showed a statistically significant change in the mean Perceived score for question LP03 from 2003 to 2006 (p<0.05).

Practical Implications/Value: This statistical approach provides a vehicle for identifying changes in user perceptions in relation to specific questions on LibQual+ retrospectively, that can be further investigated with supplemental datasets to determine which changes libraries have made that have had substantial impact on user perceptions of library facilities in order to target future efforts on improving perceptions of service quality.

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Discussion of Statistical Tests: In exploratory research, researchers test all possible combinations of groups to identify significant differences. A one-way analysis of variance (ANOVA) is useful when comparing three or more groups and indicates there are differences in group means, post-hoc tests are then used to determine among and between which groups significant mean differences occur. As this study examines the results of four survey years each having different sample sizes and unequal variances, the Games-Howell post-hoc test was identified as an appropriate choice to fit the

Exploring Methodologies for Identifying Impact: A Statistical Analysis of Library as Place Questions from LibQual+ at Washington State University 2003-2012

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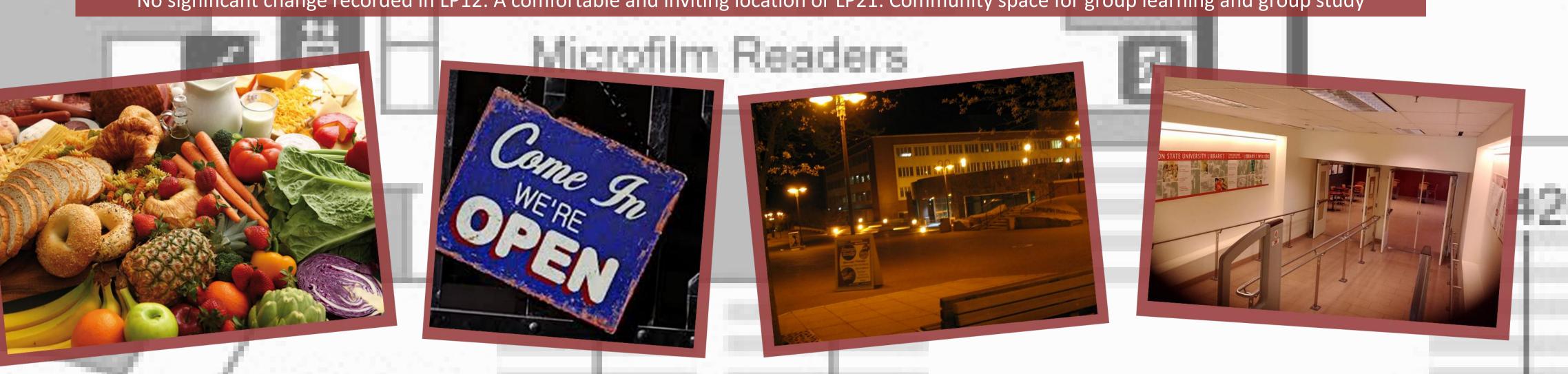
Major Changes to Holland & Terrell Libraries' Facilities and Services

- Hours Extended to 2am most days
 - CUB Corridor Opened

- Group study rooms added
- Food and drink allowed in libraries

				Holl	and / Terrel	Statistica	ally Signifi	icant Chan	ges	-			
	LP03 Library space that inspires study and learning			LP08 Quiet space for individual activities			LP17 A gateway for study, learning, or research			Library as a Place overall			
MN							2003-2006	faculty	\uparrow				
MN	2003-2009	faculty	\uparrow	2003-2009	faculty	\uparrow	10000		0100				
MN							2006-2009	faculty	\downarrow				
MN	2009-2012	faculty	\downarrow				,		2.00.00				
PR	2003-2006	all	\downarrow			_							
PR				2006-2012	undergraduates	\downarrow							
DE			· · · · · · · · ·				2006-2009	graduates	\uparrow				
AD				2009-2012	graduates	\downarrow	2009-2012	graduates	\downarrow	2009-2012	graduates	$\overline{\hspace{1em}}$	
SU	2003-2006	all	\downarrow		8.61	1686							
SU				2003-2009	faculty	\downarrow	TIS			2003-2012	all		
SU	2003-2012	all	\downarrow							2003-2012	undergraduates	\downarrow	
SU				2006-2012	undergraduates	<u> </u>							
SU				2009-2012	undergraduates					2009-2012	undergraduates		
SII				2009-2012	graduates								

No significant change recorded in LP12: A comfortable and inviting location or LP21: Community space for group learning and group study



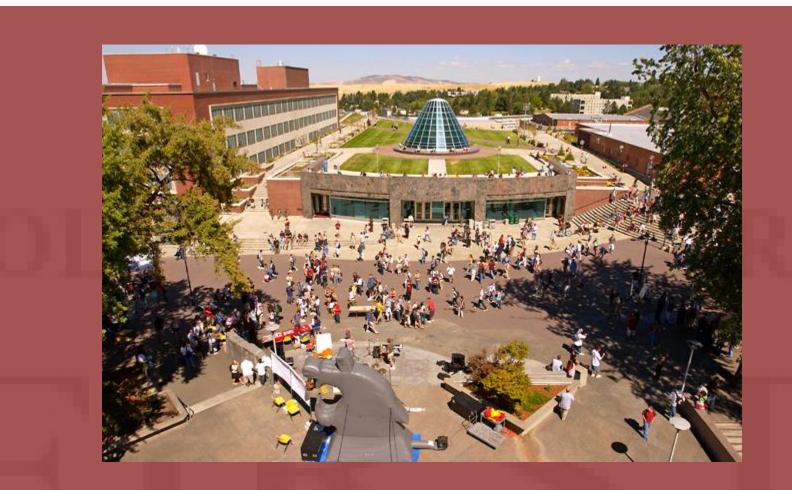
Changes made to Holland & Terrell Libraries' Facilities and Services

2003-2005	2006	2007	2008	2009	2010	2011	2012
Changes	 Food and 	"New" Griffin	• Corridor	• Additional 40	• Laptops made	Graduate	 Smart boards
Undocumented	drink allowed	library catalog	directly	seat computer	available for	students	and other
	in Library Facility	(ILL product)Article Reach	connecting Holland &	classroom added on	checkout • Power strips	provide limited	technology added to
	WSU Research		Terrell Library		 Power strips added to 	reference	group study
	Exchange	lending	with student	 Office delivery 	group study	support	rooms
	(Institutional	service)	union (A.K.A	of books and	tables in	Tech store	 Group study
	repository)	instituted	CUB)	articles for	Reference	located on	room
	launched	 Facebook 	• 2 Library	graduate	area	ground floor	reservation
	"Bookin"	account	classrooms	students,	 BX article 	 LibAnswers 	system
	sculpture	created and	renovated	faculty, and	recommender	integrated	launched
	added to main	•	(Terrell 103 &	staff	(Ex Libris	into web	(LibCal)
	library	 Citation 	105)	 Elimination of 	product)	services	• Under-
	entrance	management	 Open hours 	ILL fees	added to	• Evening	graduate
		sessions begin	extending	 WSU Libraries 	federated	haunted	students
		(Zetero,	beyond 11pm	Twitter	search	library tours	provide
		EndNote	to 2am most	account	 LibGuides 	begin	limited
		Web)	days	launches	replace html		reference
			Library		subject guides		support
. 1			Website		 Centralized 		
			renovated		campus		
			 Additional 		service		
Classn			study rooms		replaces old		
4 75-2			added to		pay-as-you-go		
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copy card

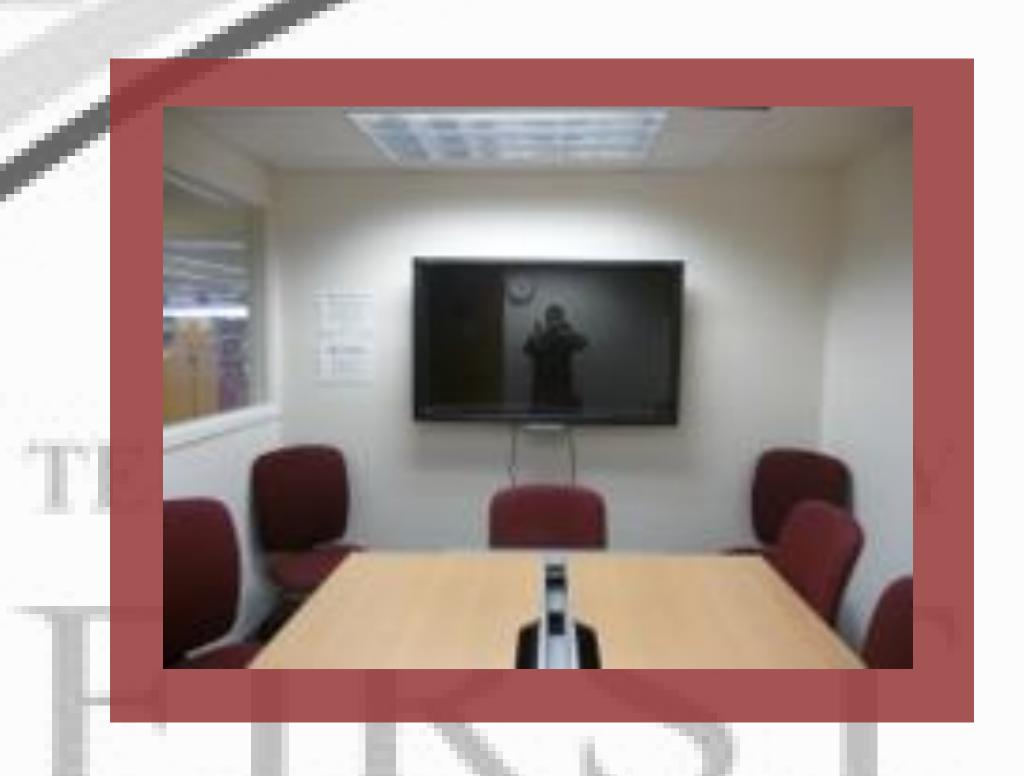
process

ground floor



Summary of Preliminary Analysis: The methodology applied in this study is exploratory in nature and intends to assist in retrospective analysis when no direct assessment has been conducted. This poster presents all significant LibQual+ findings relative to Library as Place questions for users of Holland and Terrell Libraries at Washington State University, Pullman, conducted during the years of 2003, 2006, 2009, and 2012. Significant changes in perceptions of the user groups of faculty, graduate students, and undergraduates are correlated to major changes impacting library facilities and services including expanding hours, connecting the library to the student union (a.k.a CUB), the addition of group study rooms, and a policy change allowing food to be consumed in the library.

This exploratory approach like many others raises more questions than it answers. It has for the researchers affirmed that LibQual+™ alone is insufficient for determining which changes made have had an impact on user perceptions and expectations as it is an indirect assessment of particular changes made. As such, LibQual+™ does not intend to point to which changes made have had an impact, but rather to illuminate that changes have happened in relation to user perceptions and expectations relative to a particular question. Further investigation integrating additional datasets is needed to evaluate the impact of particular changes more thoroughly.



Future Directions: This study has illuminated the importance of conducting direct assessments at the time of implementation of changes to services or facilities. Additional data sets of gate counts, and data collected as part of the Holland and Terrell Libraries Space Usage study, have been identified for further analysis. Researchers are hopeful that statistical analyses against these data sets will support the findings in the current analysis and can be integrated into the methodology in order to more fully develop an approach for retrospective analysis of change in academic libraries.