

Articles

Transforming Space in the Curriculum Materials Center

By Linda Teel

Abstract

Transforming space to facilitate and compliment learning has become an integral component in the redesign and renovation of academic libraries. This article offers a framework of discussion based on the redesign and renovation of the existing curriculum materials center at East Carolina University Joyner Library. The curriculum materials center, better known as the Teaching Resources Center (TRC), is housed on the second floor of the four-story academic library. The TRC utilizes more than 17,800 square footage of the academic library. Planning, budgeting, implementation, promotion and assessment are discussed highlighting specific details of value in consideration when redesigning and renovating space in a curriculum materials center.

Background

East Carolina University J. Y. Joyner Library serves as one of two academic libraries for the campus. Located in Greenville, North Carolina, the campus enrolls more than 27,800 students making it the third-largest university and fastest-growing campus in the University of North Carolina system for six consecutive years. The university is renowned for its historical beginnings as a teacher training college and continues that proud tradition by educating the highest number of teachers in the state of North Carolina (US Journal of Academics, 2012). In order to better serve the more than 3,000 students enrolled in education programs, the Teaching Resources Center (TRC) originated in 1988 as a curriculum materials center designed to provide specialized resources, materials and services for students enrolled in the teacher education program.

The center provides outreach programs to in-service educators for more than 38 eastern North Carolina school systems. After multiple relocations of the center within the current library facility, the TRC moved to its current location on second floor of the academic library in 2001 where it provides an invaluable collection and services to its patrons. In August 2008 as part of an overall strategic plan to assess space in the library, a space assessment was conducted to project the need for redesign and renovation of the TRC in order to better facilitate and compliment learning. The space assessment addressed the following needs: redesign of staff and student work areas; availability of group study areas; construction of instructional/study areas; renovation of production areas; relocation of collection and redesign of service desk, furniture replacement, collaborative work space, and study areas. The TRC space assessment documented the need for redesign and renovation to configure new physical space to better facilitate and compliment learning experiences for patrons.

Space Needs

With the completion of a space assessment plan, the next step involved the initial planning of a redesign project. Consideration of trends facing today's students differs significantly from just a decade ago. Classrooms are no longer the only form of learning space as the majority of student learning activity occurs outside the classroom today. Once based solely on individual effort and achievement, performance has shifted to team activities and collaborative learning motivated by social interaction with peers outside of the traditional classroom (Milne, 2006, p. 11.1-11.2). An emphasis is placed on student-led inquiry and collaborative learning requiring libraries to focus on and provide flexible designs and interactive space. This emphasis shifts learning from the facilitation of knowledge discovery in the classroom to the creation of knowledge enabled by shared learning tasks and productivity using technological tools (Sullivan, 2010). With such a shift, computer and networking technologies are natural components of students' lives making technology mainstreamed into today's learning with the Net Generation or Net Gen utilizing mobile phones, netbooks, tablets, iPods, along with Web 2.0 technologies as standard learning tools.

According to Beard and Dale (2008) by 2015, library patrons will be those who utilized e-books as a standard part of their secondary curriculum. Oblinger and Oblinger (2006) described this generation as those who have never known life without the Internet. The Net Generation (born after 1982) are technology-obsessed, social and connected, traditional, achievement-oriented, and attention-challenged. Learning for them occurs in less sequential order integrating discussion threads, blogs, wikis, texting, Facebook and other social networking. Today's patrons expect library space to reflect their technically charged surroundings in a way that could scarcely be imagined only a few years ago which makes the future even more unpredictable (Cohen, 2009).

A final trend for consideration relates to the fact that students no longer consume information; rather, they produce content. This production incorporates a range of digital devices and tools that allow them to create and shape content, and publish it instantly. Such trends emphasize that learning has become less structured and more informal and social; therefore, redesign of space in libraries must encompass new design approaches which will interface emerging technology into flexible space to provide access and student interaction (Milne, 2006, p.11.1-11.2). In other words, "students today think and process information differently from their predecessors" (Dale & Matthews, 2006, p.27).

Areas of Learning Space Transformation Impact

With library space transformation exploding across college and university campuses today, three areas impact that transformation: demographic factors, technological factors, and pedagogical factors. Demographic factors focus on the aspect that students are digital natives and multitaskers. Technological factors emphasize digital and multimedia content embedded into the learning experience. The pedagogical factor focuses on collaborative and informal learning in group settings (Dewey, 2008). Using trends in learning combined with the factors driving space transformation and users' needs, the members of the Teaching Resources Center developed a list of guiding principles for the redesign and renovation of the center's space.

Statistical information and data available justified and accentuated particular immediate redesign recommendations. Existing data from LibQUAL was analyzed to review patron comments along with surveys and observatory data to determine users' needs and expectations. Three major principles guided the redesign and renovation. The first principle focused on the need to design space supporting users' programmatic needs which included: presentation practice areas, technology equipped collaborative learning areas, classroom style settings as well as individual and group study areas. A second principle guiding the redesign was flexibility. Flexibility addressed the constant change of learning environments, responsiveness to varied learning styles of users and cost reductions for future changes. A third and major guiding principle focused on building partnerships to include stakeholders, other campus and library departments and interior design experts to create flexible space that would be sustainable with time. These groups included, but were not limited to students, staff, faculty, campus IT and facilities, library building operations, campus and library administration, library security, and an interior design specialist (Twiss-Brooks, 2009). Based upon the TRC space assessment, current learning trends, factors transforming learning space and principles guiding redesign and renovation, a plan was developed for the redesign and renovation project.

Redesign Planning

In September 2010, the Dean and Associate Dean of the library met with the Head of Services of the Teaching Resources Center and Building Operations to discuss a preliminary plan for renovating the center. During the midst of budget constraints, funds were available for capital outlay projects based on need and justification. Based upon the recommendations from the TRC space assessment, the redesign and renovation costs were estimated at approximately \$180,000.00. With the support of library administration, the request to renovate the TRC was submitted to campus administration justifying the need and costs. In November 2010, the request was approved and funding was granted with stipulations that funds be expended by July 2011 leaving only seven months to complete the majority of the project. Project work began immediately in phases.

Implementation-Phase One

Phase One of the project involved configuring the addition of data and electrical lines partnering with the IT and Building Operations departments to determine the need, physical location and costs. The plan included replacement and additional lap-top ready tables in open areas and the need for increased electrical wall and floor outlets. Increasing the number of computer workstations meant the installation of additional data lines. The installation work began in late December 2010 with completion of Phase One by March 2011.

Implementation-Phase Two

Phase Two involved the relocation of the Ronnie Barnes African-American Resource Center for construction of an instructional multipurpose room which would serve as group study/presentation areas when not in use for instruction. The Ronnie Barnes African-American Resource collection was transferred to rolling carts and moved to the new location once shelving was installed. Construction of Phase Two began in December 2010. The majority of Phase Two was completed during intersession and holiday break prior to students returning to campus in January 2011. The construction of the multipurpose and instructional classroom was completed in March 2011 with the installation of a third SmartBoard. Maximum flexibility, easy access to staff and patrons and the incorporation of easy and efficient access to electricity and wireless connectivity was a major goal in the design of this room domesticating and adapting space to better meet the needs of patrons (Williams, 2008). The design of the room allowed for small group study/presentation practice area utilization when not in use for instruction or class laboratory assignments.

Implementation-Phase Three

Phase Three required partnering with the Library Building Operations manager and the interior design consultant to design a new service desk and oversee the ordering of furniture. The relocation of the TRC service desk provided increased visibility along with a practical staging area for the collection. The current desk location inhibited direct visibility and accessibility. The relocation of the service desk placed it at the entrance of the center offering an open, approachable, aesthetically stimulating desk with no access barriers. The relocation of the desk also created more efficient work flow access to the production room and computer workstations. Using staff input in conjunction with floor dimensions, the interior design consultant created a service desk plan. After multiple revisions, a final design was approved.

Computer workstation furniture was replaced along with coordinating tables and chairs for the entire center. Mobile tables, chairs and additional workstation furniture were ordered for the production room. Café-style booths were ordered to provide group study areas. Leisure furniture was added to provide comfortable seating and an inviting atmosphere. All orders were placed in March 2011 with an eight-week delivery projection. While waiting for the arrival of furniture, the TRC Reference and Special Book collections were moved to provide additional space to house additional computer workstations and collaborative areas. Additional workstations were added throughout the center with the addition of three large screen monitors increasing collaborative functions and better access for visually impaired patrons.

All existing carrels were removed completely from the center. TRC storage rooms were relocated out of the center freeing three rooms for conversion to group/individual study rooms. Vinyl lettering was ordered and installed above the TRC Service Desk boldly identifying the Teaching Resources Center.

Implementation-Phase Four

Phase Four began with the arrival of the TRC service desk, equipment, and furniture. The service desk arrived in multiple shipments with installation of the desk completed in three days. The IT department coordinated moving and installation of the computer workstations to the service desk. The number of service desk computer workstations increased to provide student employees a work area serving as a staging area. The TRC service desk remained in full operation during the entire redesign and renovation project.

Upon functionality of the new TRC service desk, the previous service desk was disassembled and removed

from the center freeing space to install new collaborative workstations and additional computer workstations. The IT department moved existing workstations and added new ones upgrading and installing software during this process. Additional tables and chairs were added to this area to provide individual and group work zones. A critical component to the redesign was realizing that the engagement of this space provided different visualizations and requirements than previously. Now, this space provided adaptability and flexibility for patrons to use alone, with peers, or in combination with information and technology access and/or expert help (Nitecki, 2011).

With the arrival of the multipurpose instructional room furnishings, laptop ready tables and chairs provided seating capacity of 38. Installation of a new SmartBoard served a dual purpose as an instructional tool for classroom and laboratory instruction and a production tool for patrons allowing laptop connectivity for creating modules/lesson plans and rehearsing for presentations.

The largest open area in the TRC, the Debnam Resource for Family Literacy Center, was transformed with new furniture and additional electrical and data lines. Reconfigured to accommodate additional seating and collaborative learning space, the seating capacity increased from 48 to 60. All tables were laptop-ready providing users with immediate electrical access. Wireless connectivity was upgraded to provide a stronger signal throughout the center. The existing SmartBoard remained in the area providing accessibility for patron use. Transformation of this area resulted in understanding how students are interlinking physical and virtual spaces to champion new approaches to generic learning spaces (Black & Black, 2006). The mobile technology in this area allows patrons to “create anywhere, anytime learning environments” necessitating adaptable and flexible space (Wolff, 2006).

Located in the rear of the center, the café study area offered an abundance of electrical access, upgraded wireless connectivity and laptop-ready booths for individual or group study. Within three weeks, the café study area was completed and being used heavily.

Implementation-Phase Five

The reconfiguration of the production room required little redesign since space available for housing production equipment was limited. Mobile and height-adjustable tables in conjunction with new workstation furniture were installed increasing the seating and computer access for patrons. With the final phase of the project completed, the goals to redesign the Teaching Resources Center (Figure1) and expend the *Teaching Resources Center Renovation Expenditures* (Figure 2) were completed on time by June 30, 2011.

Figure 1

Redesigned Teaching Resources Center Floor Plan

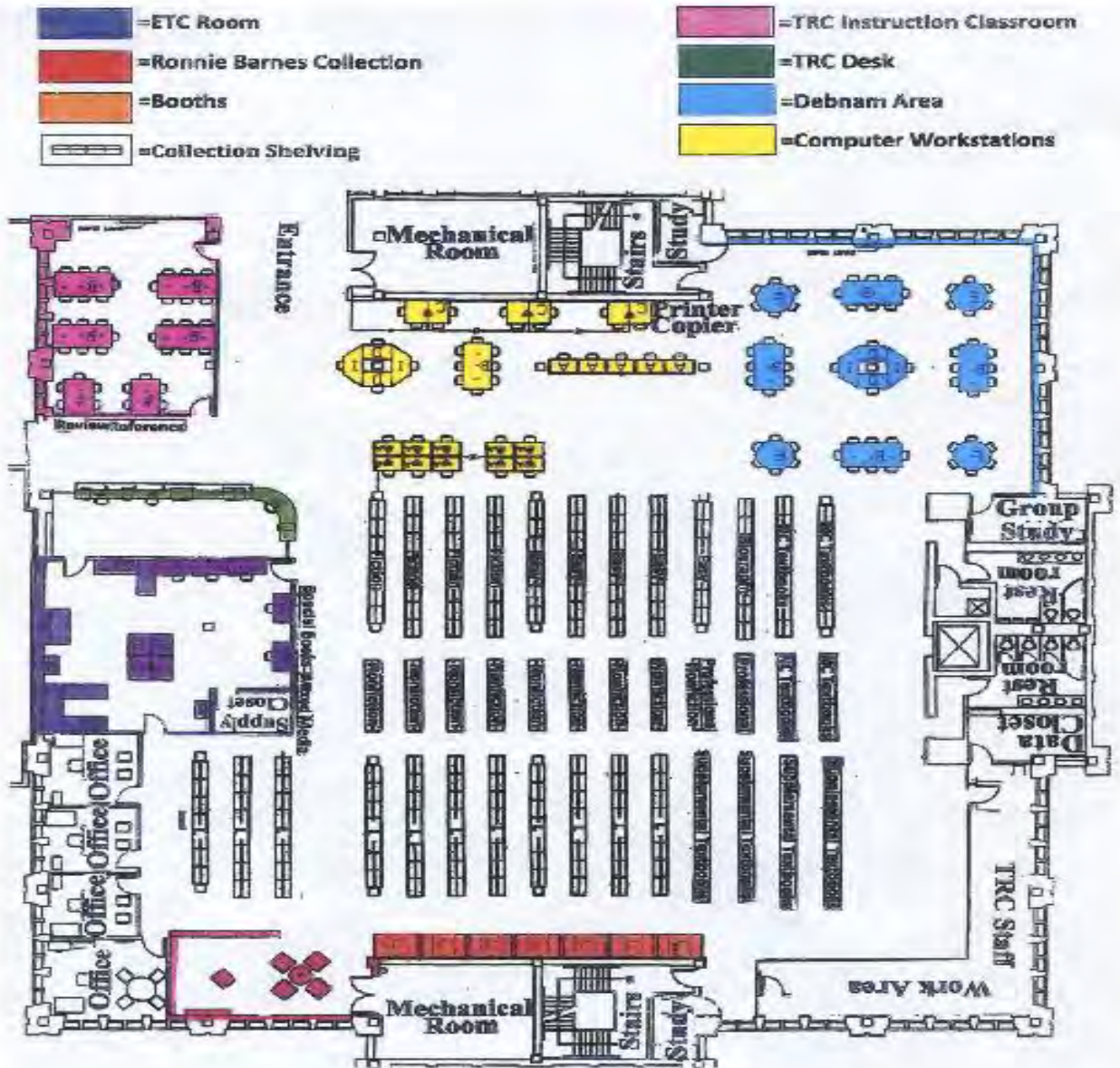


Figure 2
Teaching Resources Center Renovation Expenditures, June 30, 2011

Qty	Description	Unit Cost	Total Cost
1	Custom L-shaped service desk: 32' X 12'6", Corian surfaced, 2 hinged gates, 3 box file drawers, 1 lateral file-36" wide, and 1 two-door storage cabinet-36" wide and five quad receptacles		\$25,312.00
3	Ergonomic desk chair without arms, mesh back (slate) black/silver frame, black base, plum upholstery, grade 4	\$307.60	\$922.80
152	Ergonomic chair without arms, mesh back (slate) black/silver frame, black base, plum upholstery, grade 4	\$282.65	\$42,962.80
7	Shelby Williams "Wave" booths, cherry finish, amethyst upholstery, grade 4	\$2,529.00	\$17,703.00
18	(A*) Vela computer table with brushed aluminum privacy deck: 30" X 48", duplex receptacle and two data ports	\$987.25	\$17,770.50
9	(B*) Vela rectangular table: 48" X 96" fixed, 3 semi-recessed duplex receptacles	\$1,488.30	\$13,394.70
3	(C*) Vela rectangular table: 78" X 48" fixed, without power modules	\$943.25	\$2,829.75
4	(D*) Vela rectangular table: 48" X 96" fixed, without power modules	\$502.15	\$2,008.60
4	(E*) Vela round table: 60", 2 semi-recessed duplex receptacles	\$1,012.40	\$4,049.60
2	(F*) Vela rectangular table: 48" X 72" fixed, 2 semi-recessed duplex receptacles	\$1,243.55	\$2,487.10
4	(G*) Vela rectangular table: 60" X 30" mobile, without power modules	\$476.30	\$1,905.20
4	(H*) Vela rectangular table: 42" X 36" fixed, adjustable height, 2 semi-recessed duplex receptacles	\$1,093.95	\$4,375.80
4	(I*) Vela trapezoid table: 30" X 84" fixed, without power modules	\$682.55	\$2,730.20
7	(J*) Vela rectangular table: 24" X 72" fixed, without power module	\$607.75	\$4,252.25
1	Classroom construction job: 23' X 34', 2 sheetrock walls with 10 glass windows (36" X 48"), two doors, HVAC venting and lighting rework		\$19,833.00
34	Installation of 14-wall electrical outlets, 12-floor electrical outlets, 18-data ports		\$5,922.00
1	SmartBoard-600 series with UX60 projector		\$8,400.00
3	42" workstation monitors (Samsung) with mounting brackets	\$650.00	\$1,950.00
1	Vinyl "Teaching Resources Center" letter set: 11.5" X 133", Lucinda Calligraphy font, black		\$47.80
6	Custom chair cushion, 3" thick, 18" X 15" X 16", Sunbrella black fabric, with ties	\$39.10	\$234.60
Grand Total			\$179,091.70

*Letters correspond with items listed on Figure 1 (Teaching Resources Center Redesigned Floor Plan).

Assessment

Assessment is an integral part of any learning space development and should be planned as a major component prior to the onset of the project. Continuous assessment provides feedback based upon impact on learners, informs and influences future plans and provides a closer understanding of the relationship between space and learning. Assessment includes simplistically counting and recording statistical data for analysis while deeply engaging the learner to understand their experiences, perceptions and feelings in relationship to learning space (Roberts & Weaver, 2006). Prior to the TRC redesign and renovation project, the space assessment and LIBQUAL results played an important role in the initiation of the project providing data to support and justify the need for change. Upon the completion of the redesign and renovation of the Teaching Resources Center, new statistical data was collected from September 2011 to April 2012 to compare and analyze with previously recorded data determining the *Percentage Increase of Teaching Resources Center Services* (Figure 3) and the *Percentage Increase of Teaching Resources Center Circulation* (Figure 4). This documentation validated a significant increase in the usage of TRC space and services after the completion of the renovation project.

Figure 3
Percentage Increase of Teaching Resources Center Services
September 2011 to April 2012*

Data Analyzed	Total Number 2010-11	Total Number 2011-2012	Percentage compared to previous year prior to renovation/design change
Instructional classes	161	201	+25%
Number of participants in instructional classes	4,152	5,603	+35%
Consultations (individual and group)	55	166	+202%
Service Desk Questions	13,808	16,984	+23%
TRC In-house Circulation	12,145	13,538	+12%
Production Room	2807	3045	+9 %

*Comparison statistics began with September due to the fact that the TRC renovation/redesign project was completed on September 1, 2011 and ended in April 2012 to comply with annual reporting.

Figure 4
Percentage Increase of the Teaching Resources Center Circulation
compared to entire Joyner Library Circulation
September 2011 to April 2012*

Year	Joyner Library Total Circulation	TRC Circulation	Percentage of TRC Circulation compared to Joyner Library Total Circulation	Joyner Library Total Book Circulation	TRC Circulation	Percentage of TRC Circulation compared to Joyner Library Total Book Circulation	Percentage of TRC Circulation compared to previous year of Joyner Library Total Book Circulation
2010-2011	114,031	38,327	34%**	60,828	38,327	63%	8%
2011-2012	90,300	38,030	42%**	51,978	38,040	73%	10%

*Comparison statistics began with September due to the fact that the TRC renovation/redesign project was completed on September 1, 2011 and ended in April 2012 to comply with annual reporting.

To assess the effectiveness and gather helpful information for future improvements and changes to the center, patron interviews were conducted in a structured, but open-ended video recording using a collaboratively developed survey tool. A similar online survey was posted for patrons' responses. The survey was conducted during fall and spring semesters to collect feedback on space changes. An analysis and summary of survey responses was compiled to develop a list of *Recommendations for Consideration* (Figure 5) and present to library administration. Funding was allocated to address the majority of recommendations. Revisions continue to be made to survey instruments annually continuing to collect patron feedback on the redesigned space. The encouragement of patron input through continuous assessment allows patrons to have an active role in managing and utilizing library space to meet their needs. Such involvement is essential and practical as patrons today select library space as their scholarly homes (Mirtz, 2010).

Figure 5
Recommendations for Consideration
Ranked in Priority

Recommendation	Supporting Information	Action for Consideration	Rank*
Continue to add more resources (books, die-cuts, e-books, etc.)	Funding is allocated annually for the purchase of additional resources.	Education Curriculum Librarian will continue to add resources encouraging patrons to submit requests	4
Extend operational hours	Current TRC hours: Mon-Thurs 8 am-10 pm; Fri 8 am-5 pm; Sat 10 am-7 pm; Sun 12-10 pm	New TRC hours: Mon-Thurs 8 am-11 pm; Fri 8 am-5 pm; Sat 10 am-7 pm; Sun 12-11 pm	4
Add furniture to accommodate book displays	Book displays were exhibited on the tops of the former Big Book shelving which has been removed from the center. A metal book display has been used at the TRC entrance for "New Books." It needs to be replaced with a more compact table.	Two mobile book displays will be requested for purchase to place in the area where the Big Books were located prior to relocation. Additionally, a table will be requested for purchase to replace older "New Book" display area.	4
Add glass window to door entering the ETC room from the TRC service desk	While this was not a request from our patrons, it has been suggested by members of the TRC due to several incidents where patrons were bumped by the door when it was opened from the desk area.	Discuss work order with Assistant Director of Public Services for approval to submit work order for consideration based on cost.	4
Add computer workstations	At this time, the library has decided to limit the number of available computer workstations due to the fact that most patrons have their own laptops.	No request will be made for additional computer workstations; however, request will be made to add 6-8 monitors (mobile and stationary) for patrons to use with laptops.	3
Relocate "L" section to general stacks	Weed "L" section of obsolete, low circulating materials, partial runs of journals and journals now available electronically to free space for furniture to provide additional quiet spaces	Meet with Collection Development department to discuss the weeding of the "L" section. This project will begin in fall 2012 with completion by summer 2013.	3
Add quiet space/seating/tables	Quiet areas (single table with chair) can be added along wall of the Debnam Family Literacy Center and along outside wall of the TRC Staff Work Area.	Add electrical outlets on the walls of the Debnam Family Literacy Center and the TRC Staff Work Area outside walls to accommodate single laptop tables with chairs.	3
	Upon weeding of "L" section, shift collection to remove five shelving ranges where additional "wave" booths/individual study tables along with additional electrical outlet can be installed.	Action will be taken to add booths after weeding of "L" section has been accomplished.	2

Improve lighting	This is an option that needs to be addressed by facilities based upon need.	Members of TRC discuss and review area to see where lighting needs improvement.	1
Expand footage of Teaching Resources Center	The TRC square footage could be expanded when the mechanical rooms are no longer needed for the HVAC systems which are based upon moving the systems by campus facilities.	HVAC was scheduled to be replaced and located on roof of building; however, due to budget constraints this project has been postponed.	1
Add leisure furniture	At this time, the TRC has no space to add more leisure furniture.	This is not an option at this time.	0
Add study rooms	The TRC has no available room to add any study rooms; however, this could be considered if the mechanical rooms become available.	This is not an option at this time.	0
Construct additional classroom	The TRC has not available space to convert to a classroom. The Debnam Family Literacy Center is used for additional classroom space at times.	Due to the lack of space, this is not an option at this time.	0
Address parking for community residents	Parking is controlled by the Parking and Transportation department on campus.	Suggestions have been sent to the department for consideration.	0
Relocate Teaching Resources Center to campus Education building	This suggestion might be considered when the College of Education builds a new facility.	At this time, space is not available for the TRC to move to the campus Education building.	0
Offer school supply products for sale in the ETC room	This suggestion is not an option as all collection of money must be directed through the circulation department due to campus policies and state auditing procedures.	This is not a service that the TRC can offer.	0
Provide faculty space for consultations/research	The TRC has no available room to add any research rooms.	This might be considered if mechanical rooms become available.	0

***Rank:** 4=consider immediately; 3=consider within 6 months; 2=consideration within one year; 1=consideration within 2 years; 0=no consideration within 3 years.

Conclusion

To relate Nitecki's (2011) insight to the curriculum materials center, the discoveries related to space requirements and criteria adapted to design spaces in specific libraries are not standardized but rather customized to embrace their role in their college's or university's culture and enterprise of education, research, public service and management of relations with the multitude of their stakeholders. Basically, what is the contribution of space fulfilling in the role of the library or specifically in the Curriculum Materials Center? With the trend of learning shifting emphasis to student-led inquiry and collaboration, flexible designs and interactive spaces represent transformative change that curriculum materials centers and academic libraries will need to make in order to provide learning spaces that will meet the needs of patrons (Sullivan, 2010). These redesigned learning spaces must be accessible, collaborative, flexible, future-proofed and stimulating. With different learning activities taking place simultaneously in different zones and activity areas, transformed spaces must serve as a learning showcase supported by continual assessment and change. Therefore, a pleasing and functional library interior design supports and enhances library programs which extend the learning process (Barclay & Scott, 2011, p. 92).

Sannwald (2009, p. 197) recommends that library redesigns and projects be evaluated based upon specific questions rather than revolving around contractual and business obligations, such as the completion of the project within budget, contractors' performances and responsiveness, and degree of delivery and adjustments

made to meet the library's timeframe. In other words, was the project:

- planned and designed to reinforce the library as a center of the campus or community?
- designed to provide comfort and health as well as safety and security?
- designed to make effective use of available resources?
- designed to address changing needs of the library and patrons over time by permitting flexibility and adaptability?

One goal of the redesign and renovation of Joyner Library Teaching Resources Center was creating flexible learning space to bring students, faculty, community, staff, librarians, and information resources and services together for active learning as Branin (2007) stated. Patrons expect library space to reflect their technically charged surroundings in a way scarcely imagined only a few years ago (Cohen, 2009).

With any renovation project, library stakeholders must visualize the area being renovated as a learning laboratory for users which, in turn, makes each project unique due to a host of local circumstances including: climate, zoning, codes, funding sources, populations served, topography in conjunction with library tradition and culture. For individuals who have the responsibility of completing the project, they must realize that because they have a stake in the outcome, it is important that they are strong team members in the process. A wide spectrum of stakeholders must be involved early in the planning process to support outcomes to meet the needs of both users and staff. The library professional must plan wisely considering the budget, current needs of users and staff as well as flexibility for the future. During the entire process, it is essential to communicate effectively and regularly with library administration maintaining strong support of the project. It is also necessary to realize that problems, challenges, crises and even disappointments arise during implementation, but compromise and consensus usually yield alternatives that overcome those issues.

Finally, library professionals must realize the importance of assessment in any renovation project. Assessment is the tool that provides feedback allowing for continuous improvement (Barclay & Scott, 2011, pp. 193-194,). It is continuous assessment that moves a library into the future combined with the present needs and the analysis of the past. Space and place play a vital role in the academic social system comprised of a multitude of interactions highly influenced by technology and culture. Library professionals must engage, direct and apply their knowledge and experience in conjunction with feedback from patrons to provide a harmonious relationship between space, patron/staff needs, resources, services and academic success (Duke & Asher, 2012, pp.166-167).

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Linda Teel

Associate Professor/Head of Services

Teaching Resources Center

J Y Joyner Library

East Carolina University

Greenville, North Carolina 27858-4353

Voice: 252.328.2287

Fax: 252.328-0918

Email: teell@ecu.edu