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PROCEEDING OF 3rd INTERNATIONAL CONFERENCE ON REBUILDING PLACE (ICRP) 2018

Towards Safe Cities & Resilient Communities

13 & 14 SEPTEMBER 2018
IMPIANA HOTEL, IPOH, PERAK

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eISBN 978-967-5741-63-0

ORGANIZED BY

Faculty of Architecture Planning and Surveying
Universiti Teknologi MARA, Perak Branch
Seri Iskandar Campus,
32610, Seri Iskandar,
Perak Darul Ridzuan, MALAYSIA

ICRP2018
3rd International Conference On Rebuilding Place

13-14 September 2018
ISBN 978-967-5741-62-3 eISBN 978-967-5741-63-0

DEVELOPING LIBRARY SPATIAL SETTINGS MATRIX THROUGH STUDENT LEARNING BEHAVIOUR

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Abstract – Many studies have investigated student learning behaviour (LB) in the academic library and reported that spatial setting provided sometimes could not facilitate the informal learning that took place. Does LB influence by the spatial setting or it is the other way round? This paper aims to understand these two factors that may give impact towards the design of academic library - the LB and the spatial setting. The first main objective is to identify the category of student LB by screening the activities occurred. The second is to examine how library spatial setting could facilitate the learning by investigating the activities conducted and how the space being utilized. In order to acquire the findings, content analysis method were used where keywords were identified before and during data analysis. All literature reviews were gathered from various types of journal, especially publishing in Journal Academic of Librianship. The literature regarding the learning behaviour, learning spaces and student preference space was observed during data analysis. From the findings, two groups of learning were discovered - 1) the individual learning, and 2) the group learning. Based on these, the Matrix Model of LB and Spatial Setting was developed which influences the style of learning - i) Individual/Private, ii) Individual/Public, iii) Group/Private, and iv) Group/Public. Besides that the environment, furniture design, technology and tools also contribute to the spatial setting preference and LB. This study will benefit library scholars, designer and librarian to plan the academic library in term of arrangement of space, furniture selection as well as tools and technology to be used.
Keywords - student LB, academic library space, informal learning in library, library spatial setting, academic library.

1 INTRODUCTION

It is commonly said that present learning environment for students is going through a revolution. From the rigid educational furniture settings, it has changed to variousphysical settings that could cater diversity in learning behaviour. This can especially be seen inthe recent library design which hasmore versatile spatial settings. It has become a challenge for spatial designers to design academic library befitting students' needs and new types of learning in higher education.

The controversy arises whether the spatial settings provided will be fully utilized, especially when the lifestyle becomesconvenientdue to electronic digital penetration. With the arrival of electronic access to books, journal articles, the gate counts and statistics of visitor has declined.This has also affected the use of space.Students not only can access into library content from outside the library building but they also can contact the librarian electronically. besides, the ability to access the sources available in library, studentsrequire the good learning space that can lead to the positive outcome of their learning activities in the library.However, some problems arise on how the library spatial settingsfacilitate the student learning activities.Although, variety of activities occurred, the spatial settings for such function still cannot befit the condition. For example,studyroom designated for individual study that requires a silent space being used as an informal meeting area for group work. Not to mention, a significant number of working places in study rooms become underused due to inadequate table size.

In a recent trend, academic library over the world attempts to make a change in providing space, resources and services to attract students coming to the library. Many research concentrated on how to improve the systems by carrying out an evaluation to seek whether the spaces provided give a positive-negative impact to users. Some of the cases demonstrated that a single student does not necessarily choose individual table setting to work for, but instead choose a group study table, which

has a large table setting to spread own belongings such as books, papers, laptop and supplies (L. Bedwell & C. Banks, 2016).

Since there were many arguments on the space as mentioned earlier which is not accommodating LB, this paper attempts to review the student LB (henceforth stated as LB)in the library of higher institutional learning and how the academic library spatial settings should befit the condition. The research question of this study is how the appropriate spatial setting that can facilitate the learning activities in academic library bythe identifying the student LB. Thus, this survey seeks to distinguish the category of LB by screening the learning activities occurs in the library. Next is to examine on how the spatial setting could facilitate the learning activities by investigating the activities conducted and how the space is being utilized.

2 THE RESEARCH METHODOLOGY

The summative content analysis was used where keywords were identified before and during data analysis. The collected literature was classified according to the topic such as LB and activities (studying, researching, completing assignments, discussing, collaborating), and spatial setting (learning environment space, furniture selection and tools was used). The study related to unobtrusive observation, pre and post evaluation of library usage, student's perception, student's satisfaction, space assessment, and student's preference and student base investigation of student behaviour in the library spatial settings where most were written by librarian. The literature was gathered from the various journals, including the Journal of Academic Librarianship, Journal of Library and Information Science and Journal of Library and Information Practices and Research. The content was analysed using the coding sheet.

The paper analyzed literature that links student LB and library spatial settings from library management, psychology, business communication, facilities and architecture fields. Two objectives wereformulated. First, the concept of student LB related to learning activitieswasdeveloped. Second is the study of library space and features supporting learning related to spatial settingswerereviewed. In regards to library spatial settings, the related literature is shown in Table 1.

Table 1 The Literature Review Sources

No.	Topics	Authors
1	The use of library space	(K.Hall & D.Kappa, 2015; R.Pournaghi, 2015; S.Tanakovic, 2013; S.Hyun & T.Wan, 2015; L.Bedwell & C.Banks, 2013; L.Bedwell & C.Banks, 2016; K.Webb, M.Schaller, S.Hunley et.al, 2008; C.Ugwuanyi, R.Okwor & E.Ezeji, 2011),
2	Student perception on the library space	(Gensler, 2015; S.Beatty, 2016; C.Andrews & S. Wright, 2012)
3	Student activities in the library	(D.Suarez, 2007; L.Jordan & T.Ziebell,),
4	Student satisfaction on the space provided	(M.Gurel, 2016)
5	Library space preferences	(SHURA, 2016; R.Applegate, 2009; S.Oliveira, 2016; R.Beckers, T.Voordt & G.Dewulf, 2016)
6	Unobtrusive observation, post evaluation of library usage	(N.Abbasi, R.Tucker, K.Fisher, et.al; B.Ramsden, 2014)
7	Library space assessment	(S.Montgomery, 2014)

The study only involved LB in higher institution of academic library. It is also aim to investigate the learning behavior,without concerning multi tasking behavior. The focus of the study only involved the spatial settings, which covered funiture setting and tools being used, but not on digital and multi media system. Meanwhile, for student LB, the researchers analyzed the literature review investigating the activities occurred in the library including their LB. Both are important factorsfor spatial designers to provide better space besides the resources and services provided by the librarian. The coding method of content analysis were briefly recorded as in Table 2.

3 FINDINGS

3.1 Student LB

Previous research has interpreted student LBin an academic libraryin various contexts. Some researchers described the LB performed by students in an academic library in higher institutional learning as informal learning that involves a student driven course with a variety of activities with no teacher involvement (Cunningham & Walton, 2016). However, this paper defines the student LBs as "*how student act upon their learning activities through individual or group study*". Though many previous researchers reveal that both waysareimportant behaviour in the process of learning, the situation in higher institutional learning found that the studentstend to opt for individual study rather than group study (S. Bennet, 2015). This may be the most reason why it is necessary to provide a more individual spatial setting as it is for a place to accomplish serious work and to engage with intellectual material (Kathleen M. Webb et.al, 2008), whereas the collaborative spatial setting for group study is for research, for study and for group work (R. Applegate, 2009).

Table 2 and Table 3 show findings from the variety of learning activities forboth behaviours of individual and group learningbased ona review of various literature. From individual LB, it shows that all activities require a concentration and focus towards something and some of the actions may involvewriting, meditating, reading and studying,. whereas, groupLBrequiresthe students to collaborate with peers in a small or large group depending on their learning objectives. This may involve action like discussing, debating, presenting, meeting and brainstorming.To conclude, focusing and concentratingare associated with individual study, while collaborating and interactingare associated with group work.

Table 2 The Individual LB in Library Space

BEHAVIOUR	ACTIVITIES	AUTHOR
INDIVIDUAL	Readings on book/ article	(C. imamoglu, M.O Gurel, 2016), (Sanjica et.al), (Demas.S,2005), (D.Suarez,2007), (M.Melssen, 2014), (S.Beatty, 2016), (S.H.Cha , T.W.Kim , 2015), (D.Rendina,2016), (Powell,M. 2002), (D. A. Nitecki), (K. Simpson, 2016
	Doing research/ course work	(C. Imamoglu, M.O Gurel, 2016), Powell,M. 2002), (C.Ugwuanyi, R.Okwor,E.Ezeji,2011), (N.Abbasi, R.Tucker, K.Fisher, et.al),(S.Oliveira,2016)
	Do writing	Doug .S,2007, Neda Abbasi et.al, Betty.S, 2016)
	Do taking, consulting notes/ text	(Sanjica et.al, Doug .S,2007,Betty.S, 2016)
	Working on individual assignment.	Sanjica et.al, Neda Abbasi et.al,),(Bennet.S,2011), (Betty.S, 2016), (S.H.Cha , T.W.Kim , 2015), (DNA. Mokhtar, 2016), (SHURA, 2013), (Jordan and T. Ziebell),(David Radcliffe et.al, 2009)
	Individual revision for examinations.	(Chijioke F.U, 2011, Neda Abbasi et.al, DNA. Mokhtar, 2016) Chijioke F.U, 2011, Neda Abbasi et.al, Oliveira.S.M,2016
	Individual study	Bryony R. 2011; Bedwell.L,2016; Kathleen M. Webb et.al 2008; Leah M. D.,2011;S.Beatty, 2016; S.H.Cha &T.W.Kim , 2015; Gensler,2015; D. A. Nitecki&K. Simpson, 2016; DNA. Mokhtar, 2016; S.Beatty, 2017; SHURA, 2013; L.Jordan &T. Ziebell, C. Andrews & S. E. Wright, 2015.

Table 3 The GroupLB in Library Space

BEHAVIOUR	ACTIVITIES	AUTHOR
GROUP	Discussing class materials with friends	(Çağrı İ, Meltem Ö. G, 2016, Neda Abbasi et.al, Bennet.S,2011, Leah M. D.,2011, DNA. Mokhtar, 2016)
	Study group	Sanjica et.al, Bedwell.L,2016, Rachel A.,2009, DNA. Mokhtar, 2016)
	Finding information/ collaboration on class assignment & project	(Sam.D,2005; Doug .S,2007;R.Applegate,2009; Bennet.S,2011; C. Andrews and S. E. Wright, 2015, Kathleen M.Webb et.al 2008, Oliveira.S.M,2016, M.Powell, 2002, D. A. Nitecki, K. Simpson, 2016, S.Beatty, 2017, SHURA, 2013, L.Jordan and T. Ziebell), (Sam.D,2005)
	Computing, Writing, and Creating Presentations	(Sam.D,2005), (Andrews and S. E. Wright, 2015), (D.Rendina , 2016)
	Brainstorm.	(Steelcase,1996 – 2018, (D.Rendina , 2016), (C. Andrews and S. E. Wright, 2015)
	Meeting	(Steelcase,1996 – 2018), (C. Andrews and S. E. Wright, 2015)
	E-Classroom.	(Marry O.K. et,al,2017)

3.2 The Relationship Between LB and Spatial Setting

The library is one facility provided by the university or college for students to experience an informal learning. Libraryspatial settings allowstudents to conduct learning at their intention both at private and public area whetherit is for individual or group learning.There is no specific guidelines that indicates certain spaces for certain LB, but the growing interest to understand the student's learning needs has made spatial designers to provide a spatial settings that could satisfy the users.

In the aforementioned statement, individual LB demandfocus and concentration studies, but they sought out for quietness, not silence and they prefer to stay in the community, not isolation (L. Bedwell & C. Banks, 2016). That is the reason why many individual learners chosespatial settings with the presence of other students, and appropriating group study tables for individual work by spreading their material out to create a personal space for themselves.Whereas, group LBthat involved with the collaborative studiesrequire interaction among group members and usually they sought for optimalspatial settings that could support theprocess of learning.To conclude, it can be said that there are four zonesof learning stylefoundin the library spatial settings which has the same findings by Steelcase.Four catagories of learning styleoccur in the academic library found as shown in Table 4. These 4 catagories require the attributes that support the learning as shown in Figure 1.

Table 4 LB categories

Bil	LB	LB Attributes
1	Individual/Private	Focus and concentration
2	Individual /Public	Focus and interaction
3	Group/Private	Focus and collaboration
4	Group/Public	Collaboration and interaction

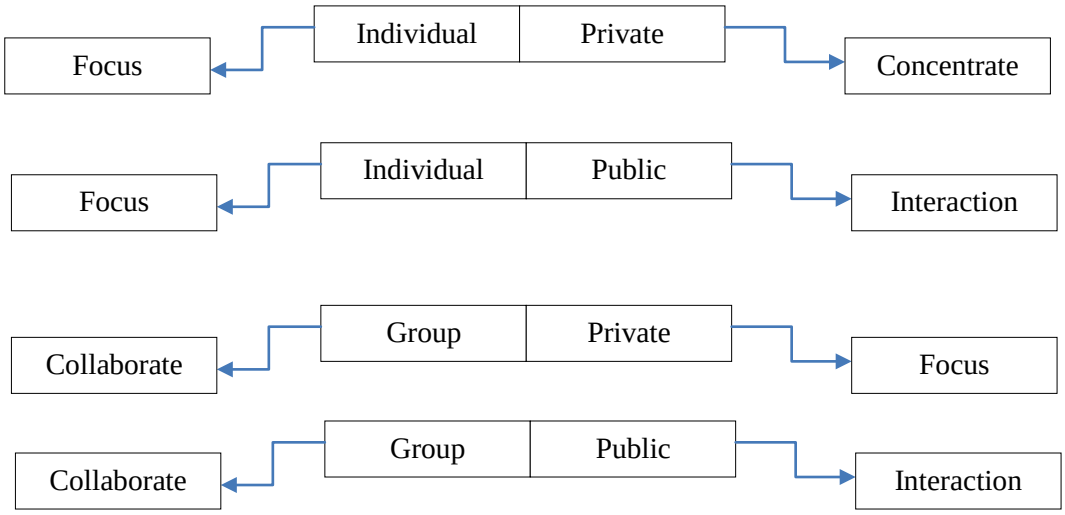

Figure 1 LB attributes

From the figure above, four (4) attributes of LBin academic library were determined – i) focus; ii) concentrate;iii) collaborate and, iv) interact. All these four LB will be conducted in either individual or group learning, and spatial settings that could facilitateLB and can be categorized into two (2) attributes – i) private space; ii) public space. Based on these attributes, the pattern ofLB and spatial settingsto achieve the learning goal may be able to be predicted.For example,ifstudentscameto the library individually and wanted to find articles and didsome readings and tookdown some notes, he/she may need a space tofocus and have more concentration. However, he/she may decide to choose a private space where it is isolated from others or any public space without the presence of other students.

Figure 2 shows the matrix that presents how all variables are interrelated witheach other. It can be summarized that when an individual needs to focus and concentrate, it will require a private area to study. Whereas, individual who needs to focus but do not want to be isolated and need to interact with others will require space taht is occupied by people. This can be found in studies by. Applegate(2009), where the most-preferred study space, popular with both individuals and groups is a study room. It is because students may prefer the freedom to talk(Applegate, 2009). On the other hand, students in group need to focus and at the same time they need to collaborate with their peers.They will require the space slightly isolated and equipment that supports collaborative work. While for those who intend to collaborate and interact with others will find the space more open tothe person's surroundings. The findings show in study by Bedwell andBanks(2016), where studentslike to work individually and collaboratively within a community environment rather than in solitude. The interrelationship between four groups of LB and the library spatial settings is shown in Table 5.

Table 5 Relationship between LB and Spatial Setting

No.	LB	Factor	Behaviour Preference	Activites
1	Individual/ Private	Focus and Concentration	-Study alone and accomplish serious work . (K.Webb,M.Schaller,S.Hunley et.al, 2008)	Research,reading, writing, typing
2	Individual/ Public	Focus and Interaction	- Work alone but intentionally in the presence of others. (M.Kelly,L.Scott Webber, J.Garrison et.al, 2008)	Individual study, workingon class assignment, individual revision,
3	Group/Privat e	Focus and Collaborate	-These group prefer to work in private, isolated from other activities in the building. (M.Kelly,L.Scott Webber,	Study group, group assignment, creating presentation, classroom, meeting

			J.Garrison et.al, 2008) - Dedicated group such aspost graduate research group and training space.(N.Abbasi, R.Tucker, K.Fisher, et.al,)	
4	Group/ Public	Interaction and Collaboration	Publicity visibly, interact with others. (M.Kelly,L.Scott Webber, J.Garrison et.al, 2008)	Discussing,brainstorming, collaborating, communicating

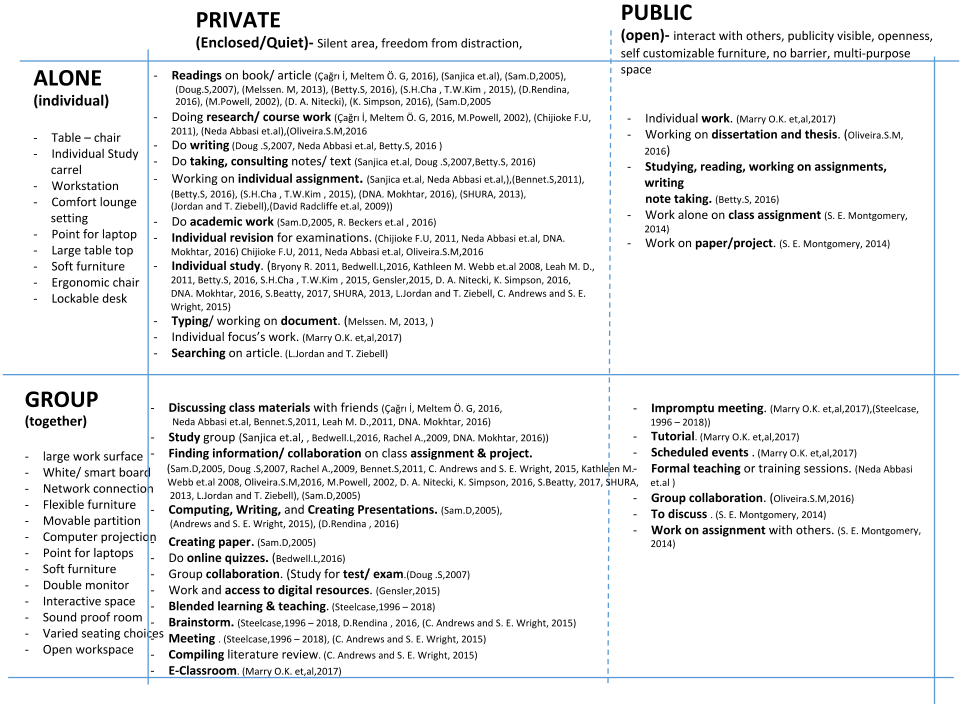

Figure 2 The Matrix of LB and Space

3.3 The Spatial Settings in the Academic Library

In the aforementioned statement, there are four groups of learning style found - individual/private, individual/public, group/private and group/public, which require suitable spatial settings that could facilitatelearning.As shown in Figure 2, even though the LB shows two similaractivities for two major groups, the spatial chosen shows different settings. Spatial settings in this study referred to the space, furniture and technology andtools provided, that aid learning activities. Based on these findings, it is believed that several issues highlighted in the above statement such as underused space could be reduced.

In terms of space, though LB may fall under different category, the activities performed might be the same. In Table 5, we can see that individual LB perform some of the same learning activities. We expect that individual LB might prefer isolated space such as silence or quiet room, but the finding shows that some of them prefer to study at open area. Even though they favor to study in an open setting, they still need their own comfort zone by creating their own temporary boundary with the presence of other surroundings. Some studies suggested thatthe territorial markers in the form of dividers on the new tables were useful so that they felt less disturbed by others (C. Imamoglu & M.O Gurel, 2016), and another individual said that the students tend to pick out appropriate group study tables for individual work by distributing their materials out to create personal space for themselves (L.Bedwell&C. Banks, 2016). Whereasforgroup learning, due to the collaboration and interaction occurs among themit is expected that they may choose open space and publicity, visibility space.However,findings showthat some of them choose an isolated space for collaboration and focus activities such as a sound proof room.

In terms of technology and tools, K. Webster(2010)has mentioned that the necessary features of library learning spaces should support three broad activities – preparing for a group assignment; working on an individual term paper; and studying for end-of-year examinations. For group work, students sought access to book group rooms with plasma screens and data projectors, coupled with other technology to foster collaboration. They also want wireless networks, extensive access to electric sockets, presentation rehearsal facilities, and recording services. For individual work, students requestenclosed sound-proof rooms with lockable facilities so that they can store computers, notes, and other materials when they need to take a brief break. When preparing for exams, students wanted similar spaces, but enhanced by breakout areas with soft furnishings, couches, coffee, and fresh air.

To summarize all elements of space, furniture and technology andtools, the matrix as shown in Figure 3 was developed. Further explanation is displayed in Table 5. From here,it can be said that spatial setting in the library in term of environment, furniture design and tools or equipmentwould be influenced by the character of student LB at that particular time when they are in the library. Any learning activities which involved focusing and concentration, probably will choose the space which is silent and free from noise (C. Imamoglu & M.O Gurel, 2016; Sanjica et.al; S. Demas, 2005; K. Webb, M. Schaller, S. Hunley et.al, 2008; S. Beatty, 2016; Gensler, 2016; M. Powell, 2002; SHURA, 2013; L. Jordan&T. Ziebell), and sound proof room (C. Ugwuanyi, Okwor &E. Ezeji, 2011; M. Powell, 2002); an area which can help student to support student learning. Besides, thereview found that the most important elements in a spatial setting of library space is the installation of multiple plug point for them to plug in their own gadget or laptop (C. Imamoglu & M.O Gurel, 2016; B. Ramsden, 2011; L. Jordan&T. Ziebell; C. Andrews, S. Wright, 2012) and large worktop to spread their books and personal belongings (S.Demas,2005; L.Bedwell&C.Banks,2016; K.Webb, M.Schaller S.Hunley et.al, 2008; J. Gotsch & D.Holliday, 2007, L.Jordan&T.Ziebell; C.Andrews, S. Wright, 2012) which is required during learning time. In terms of furniture design, individual studentbehaviour should be having table –chair arrangement (C. Imamoglu & M.O Gurel, 2016; Sanjica et.al; S. Demas, 2005, D. Suarez, 2007), Soft furniture (K. Webb, M. Schaller 2008; S. Hunley et.al, 2008; R. Applegate, 2009; SHURA, 2013; Seating Lounge (S. Demas, 2005, D. Nitecki & K. Simpson, 2016; S. Beatty, 2017), and mobile ergonomic chair (D. Nitecki & K. Simpson, 2016.

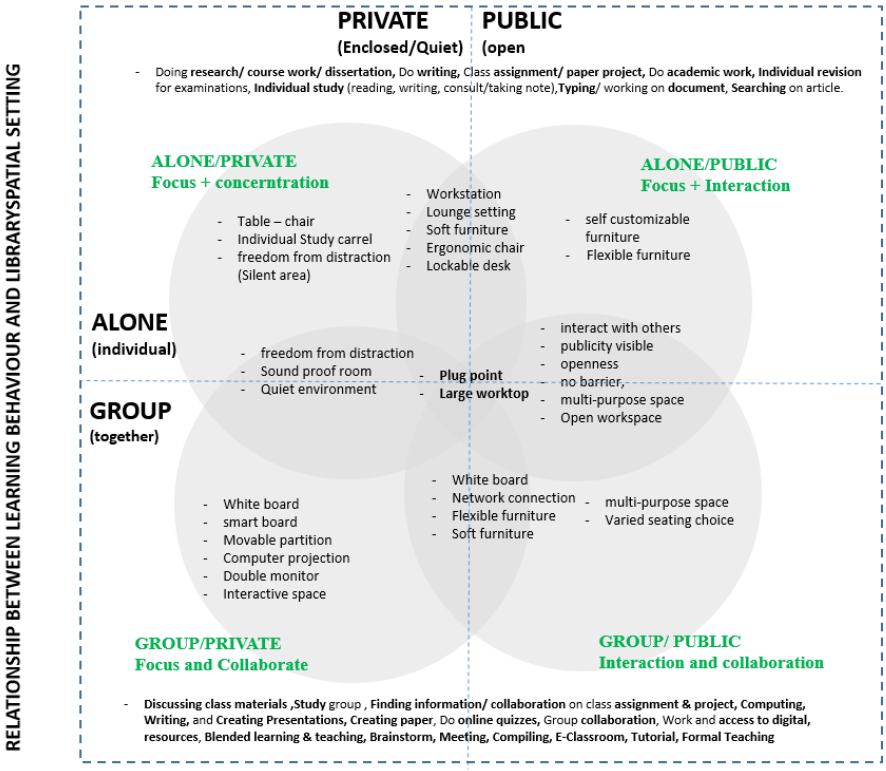

Figure 3 The Matrix of LB and Spatial Settings

On the other hand, students who intended to collaborate with others when they are studying in the library probably will choose the space that isequipped with technology and toolswhichsupport the collaborative learning such as a flexible partition(S. Demas, 2005, Rendina, 2016);S. Demas, 2005; K. Webb, M. Schaller S. Hunley et.al, 2008; flexible furniture (S. Demas, 2005, Rendina, 2016), having projector (N. Abbasi, R. Tucker, K. Fisher, et.al; D. Rendina, 2016; L. Jordan&T. Ziebell), having whiteboards (S. Demas, 2005; M. Kelly, W. Scott et al, 2017; D. Rendina, 2016; L. Jordan&T. Ziebell) and networking accessibility (S. Demas, 2005). For environment of collaborative study, it should be either isolated space with some noise (K. Webb, M. scholars. Hunley et.al, 2008), isolated (M. Kelly, W. Scott et al, 2017; D. Rendina, 2016), the space with publicity, visibility (M. Kelly, W. Scott et al, 2017; S. Oliveira, 2014) and open space (S. Beatty, 2016; Montgomery, 2014; S. Beatty, 2017).

4 CONCLUSION

In conclusion based on the findings from the literature review, it can be derivedthat the student LB influences the type of spatial setting in the academic library. LB in the academic library can be divided into 4 catagories, thereare individual/private, individual/public, group/private and group/public. LB that requiresstudents to focus, concentrate, interact and collaborate will influence the type of environment, furniture design and tools or technology to be used. The relationship between LB and spatial setting can be seen in Figure 4.

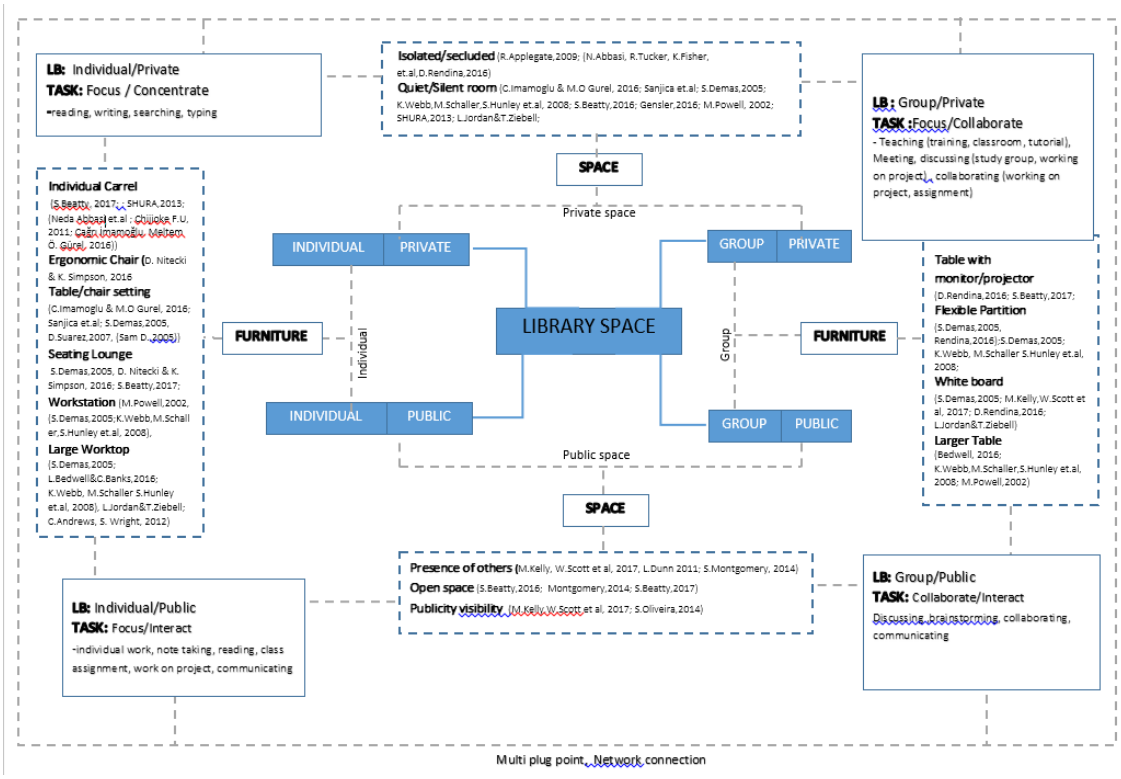

Figure 4 Conceptual Diagram of Relationship Between and Student LB

This study is important because even though many students are strongconsumers of online information resources: electronic journals, databases, and e-books,they still value the library as a place—somewhere that offers an academic ambience for their work, a forum for engagement with others, and a flexible space that meets their shifting needs during the cycle of the semester (K. Webster, 2010). Therefore this studycan help the library management in providing better facilities and space for their consumers. There are many studies have been done in investigating the student LB in the academic library but those are from oversea university. However, there are veryfew studies

which focusses on LB in Malaysia university library. Thus, thisstudy intends toinvestigate student'sLBat the university library in Malaysia

REFERENCES

Abbasi,N. Tucker,R. Fisher,K. et al. Evaluation of University of Queensland Library Spaces: three case studies at St Lucia Campus. *https://read.alia.org.au/sites/default/files/documents/evaluation_of_library_space.pdf*

Applegate, R. (2009) The Library Is for Studying : Student Preferences for Study Space. *The Journal of Academic Librarianship, Volume 35, Number 4, pages 341–346*

Andrews,C.& Wright,S.(2012), Library Learning Spaces: Investigating Libraries and Investing in Student Feedback. *March 25–28, 2015, Portland, Oregon. http://www.ala.org/acrl/sites/ala.org.acrl/files/content/conferences/confsandpreconfs/2015/Andrews_Wright.pdf*

Beatty,S.(2016) Students ' Perception of Informal Learning Spaces in an Academic Library ; An investigation into the Relationship Between LBs and Space Design. ." *Proceedings of the IATUL Conferences. Paper 1. http://docs.lib.purdue.edu/iatul/2016/spaces/1*

Beatty,S.(2017) Informal learning in the library: Informal learning in the library A student-based investigation. *SSOTL17, Oct. 11-14, 2017 Calgary, Alberta. https://prism.ucalgary.ca/handle/1880/52225*

Beckers,R., Voordt,T. &, G.Dewulf,(2016), Learning space preferences of higher education students. Building and Environment 104(2016) 243e252. *http://dx.doi.org/10.1016/j.buildenv.2016.05.013*

Bedwell,L. (2016). Seeing Through the Eyes of Students: Participant Observation in an Academic Library., *Canadian Journal of Library Vol 8 No.1, https://journal.lib.uoguelph.ca/index.php/perj/article/view/2502/2905#.WptBIKiWZnI*

Bennet,S. (2011). LBs and Learning Space. *Libraries and the Academy, Volume 11, Number 3, July 2011, pp. 765-789 (Article). John Hopkin Press DOI: 10.1353/pla.2011.0033*

Bennet,S. (2006). First Questions for Designing Higher Education Learning Spaces. *The Journal of Academic Librarianship, Volume 33, Number 1, pages 14–26, 14 December 2006. DOI 10.1016/j.acalib.2006.08.015*

Çağrı İ, Meltem Ö. G (2016). Good Fences Make Good Neighbors " : Territorial Dividers Increase User Satisfaction and Ef fi ciency in Library Study Spaces. *The Journal of Academic Librarianship pp 65–73. http://dx.doi.org10.1016/j.acalib.2015.10.009*

C.Ugwuanyi, Okwor & E.Ezeji(2011), Library space and place: Nature, use and impact on academic library, *International Journal of Library and Information Science Vol. 3(5), pp. 92-97, May 2011, http://www.academicjournals.org/ijlis*

Demas.S, (2005), Library as Place: Rethinking Roles: Rethinking Space CouncilFrom the Ashes of Alexandria: What's Happening in the College Library?*http://www.clir.org/pubs/abstract/pub129abst.html*

Dunn,L.M. (2011), Moving Toward the User-Centered Library : LBs and Their Impact on Library Planning. *Proceedings of the Charleston Library Conference. http://dx.doi.org/10.5703/1288284314962*

Gensler, (2015), Students on Libraries :Student Views on the Academic Library of Today and Tomorrow. How do students envision the present and future academic library ?

Gotsch,J. & Holliday, D. (2007), Designing a Library Environment That Promotes Learning.

Hall,K.&Kapa,H. Silent and independent: Student use of academic library study space. Partnership: The Canadian Journal of Library & Information Practice & Research. https://journal.lib.uoguelph.ca/index.php/perj/#.VqVLplMrL6Y. OI:10.21083/partnership.v10i1.3338

Hyun,S.&Wan.T(2015), The Journal of Academic Librarianship What Matters for Students ' Use of Physical Library Space ? *The Journal of Academic Librarianship. http://dx.doi.org/10.1016/j.acalib.2015.03.014*

Matthew Cunningham, Graham Walton, (2016) "Informal learning spaces (ILS) in university libraries and their campuses: A Loughborough University case study", New Library World, Vol. 117 Issue: 1/2, pp.49-62, *https://doi.org/10.1108/NLW-04-2015-0031*

Steelcase;Design Tips for Libraries. Retrieved from https://www.steelcase.com/eu-en/discover/information/education-professionals/active-learning-spaces-libraries/

Rendina, D. (2016, January 27) 6 Active Learning Spaces Your Library Should Have; retrieved from http://knowledgequest.aasl.org/6-active-learning-spaces-library/

Webster,K. (2010), The Library Space as Learning Space, Educause review, November/December 2010; (http://creativecommons.org/licenses/by-nc- nd/3.0/).www.educause.edu/er