

Utilization of Learning Space as a Learning Resource Center

Raodhatul Jannah¹, Muhammad Yaumi², Herdah³

¹IAIN Parepare, ²UIN Alauddin, ³IAIN Parepare

Email: raodhatuljannah@iainpare.ac.id¹, yaumi@uin-alauddin.ac.id²,
herdah@iainpare.ac.id³

Abstract:

A conducive learning situation is related to the quality of student learning. The creation of a conducive class will prevent students from feeling bored, physical fatigue and also the creation of a conducive class will provide motivation and comfort for students' learning. Learning space is the place where the teaching and learning process takes place, the place in question can be indoors, outdoors, or virtual space. Learning space is a facility that creates a learning atmosphere and supports the creation of an innovative learning ecosystem. There are four ideas that form the basis for developing future learning spaces, namely: learning by doing, context-based, interaction, and learning locations. To realize this design, a space-technology-cognitive concept was designed that combines aspects of knowledge, aspects of space or the learning environment and the use of technology as one of the smart learning designs in the future. Utilization of learning space as a learning resource center can be carried out by referring to five functions, namely: the function of developing instructional systems; learning media service function; learning media development function; training function and administrative function.

Keywords: learning space, learning resource center, students' learning quality

1. INTRODUCTION

Education is essentially a conscious effort to develop personality, inside or outside of school and lasts a lifetime. Therefore, education is an obligation of every human being, especially for the Indonesian nation as a moral and dignified nation to be able to strengthen its existence in the face of the era of globalization. A superior learning process is a learning process that involves the role of professional and qualified educators in their fields. The educational process takes place through learning activities. Learning alone or with the help of teachers, learning from books or electronic media, learning at school, at home or family environment, in the work environment or in the community environment will give changes to the person who learns.

Education as a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential to have religious spiritual strength, self-control, personality, intelligence, noble character, and skills needed by themselves, society, nation, and state.

Based on the understanding of education above quoted from Law No. 20 of 2003, there are several important things that must be underlined, including a planned activity that occurs in a learning atmosphere.(JANNAH et al., 2021) The atmosphere in question

is a conducive environment that allows students to focus their thoughts and attention to achieve learning objectives. Regarding this, various views are expressed by experts about the atmosphere in question. The learning atmosphere in question is related to classroom management which must be designed in such a way as to increase the interest and motivation of students.(President of Indonesia, 2003)

Various writings have produced the same conclusion, that the design of the learning environment or *learning space* is very influential on the success of the learning process.(Painter et al., 2013) But in fact, in Indonesia when we look at the existing classrooms, both in schools and universities, most still apply the traditional model. So that the learning process becomes a *teacher center*(Herdah et al., 2023), and students are not able to develop their potential to the maximum. In addition, this model is also unable to provide space for students to carry out the learning process independently, which is contrary to the concept of lifelong education. This was proven a few years ago, when the COVID-19 outbreak struck, many educational institutions that were not prepared for the changes in the learning process that had occurred in the classroom, moved to virtual spaces. Back to the initial problem, where students are unable to create a conducive learning space so that learning objectives cannot be achieved.(Jumrawarsi & Suhaili, 2021)

Therefore, to realize the educational process that is able to achieve the desired goals, it is important for educators and stakeholders to realize that *learning space* is one of the factors that must be designed in such a way as to create a conducive learning atmosphere. Moreover, with the changes in learning models that are developing today, which are no longer limited to classrooms but every place even virtual spaces are learning spaces. So the author took the initiative to make a paper about the importance of using *Learning Space* as a learning resource center.

2. METHOD

In this article, the method used is a type of literature research, which is a series of activities related to library data collection methods, reading and recording and processing information sourced from books, scientific journals, and documents (Chowdhury, Gobinda G., 2003). So the data used in this study is literature review data related to the use of learning space.

The data collection technique used is documentation, namely studying and searching for data in the form of records, documents, transcripts, books and scientific journals. The data sought in this study is about the theory of learning space, how to build a learning space, and the use of learning space as a learning resource center.

3. RESULTS AND DISCUSSION

When asking students about learning space, they will almost always answer with classrooms, libraries and laboratories.(Chatib, 2013) So it can be understood that actually the definition of learning in question is what occurs in class at a predetermined time, and has a time limit. However, along with the entry of the digitalization era, students have been able to access various sources of knowledge through digital devices. So that learning spaces must also be developed and can accommodate students directly or digitally.

Self-learning activities can be carried out anywhere and anytime in places that allow learning activities to take place. However, there are certain places that are most often used by students that have been provided by educational institutions. The place is designed in such a way that it is able to provide comfort for students, so that the definition of learning space at this time is not limited to only classrooms (Payerle et al., 2015), but all places in schools and campuses can be learning spaces.

The learning room is a place or environment where the teaching and learning process takes place, the place in question can be indoors, outdoors, or virtual space (Hartanto, 2016). The learning room in the modern concept is a place that offers an area to accommodate students in carrying out discussion session activities in a quiet and comfortable place.(Huang et al., 2019)

Each institution has processes and procedures for remodeling or creating learning spaces. In the traditional study space design process, each unit sends a space renovation request to a college or university. This process is also called the formal submission or approval process addressed to a number of committees, organizational units, and people. Once the request is formally approved, the project manager decides whether the work can be done on its own or should be contracted out. If the project cannot be carried out within the institution, the project manager hires a designer or architect, depending on the scope of the project. If the project is large, an architect determines the needs of the department in the programming phase and then creates the design. Typically, this process focuses on the design of classrooms and laboratories driven only by space requirements, i.e. one classroom for 300 students, three classrooms for 150 students, etc.(Johnson & Lomas, 2019)

In recent years there has been an increased emphasis on new learning space designs that have an impact on learning. There are three reasons why learning spaces are changing. First, the world is changing rapidly, and learners expect more connections from information, technology, and humans as they learn (Payerle et al., 2015) for example, a ban on mobile phone use during class goes against what learners are used to and has little to do with their daily practices (Rahmadi Islam, 2018). Second, information is often required to be accessible wherever and whenever needed; The connectivity of smartphones and tablets allows them to provide information in seconds. Third, learning spaces change because students change. The way students remember, find and modify information transforms significantly. Educators no longer hold an information monopoly,

which means that learners are increasingly looking for answers beyond the teacher.(Technology & Places, n.d.)

Along with changes in the learning styles of students, educational institutions are required to make the same changes. There is a growing view that schools and universities need to be innovative and build their campuses and learning spaces to meet the expectations of future students. The traditional notion of learning space is shifting from intimate classroom settings towards activity-based learning spaces where learners can actively participate in, and take responsibility for, their learning.

The design of the learning space has been carried out from various approaches, each of which is shaped by a certain perspective of the interested parties. Designers and technologists tend to focus on the architectural characteristics of different spaces, showcasing certain innovations related to learner- and instructor-based technologies and furniture configurations that can enhance the teaching and learning experience that takes place within them.(Salama, 2021)

Learning Room Design

We know that learning is not limited to one type of physical space. Therefore the term used is "learning space" as a name for a category that describes aspects of the environment designed for learning activities. Included in this category are, first and foremost, formal learning spaces or classrooms.(Shukur & Yahya, 2023) This room is designed to support face-to-face meetings of all learners, from large auditoriums to seminar rooms. Formal study rooms are usually scheduled by educational institutions. Informal learning spaces are facilities such as open spaces, designed to allow individual learners or groups of learners to pursue their learning activities.

Learning spaces are designed to support, facilitate, stimulate, or enhance learning, and teaching. Learning spaces can be designed to support listening and note-taking (for example, lecture halls or traditional classrooms). New technologies have added complexity to designing effective learning spaces and now require careful consideration of pedagogy to support learning. The characteristics of a learning space and its components include many variables, such as size, shape, shape, environmental arrangement, technology involved, intended activities and users, and so on.

There are several main principles in designing learning spaces and their relationship with student learning patterns, these principles can be seen in the following table:

Table 2.1 Learning Room Design Principles

	Layout	Furnitur	Technology	Acoustic	Lighter/color
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Academic challenges: Developing individual potential, active involvement with learning resources	Has space for the use of laptops, notebooks and books	Comfortable furnishings; Variety of furniture for a wide selection of activities	Access to print and power; access to LMS networks, internet and other software; Screen for presentation	Designed to avoid outside noise	Lighting suitable for individuals; Manageable and Focusable
Learning with peers; Engagement with friends	Able to communicate face to face (both two lines and small groups); can move and move easily; There is nothing to obscure the view	Flexible chairs and tables; Furniture that can be adjusted in location and height	Can share space	Microphones are available;	Various lighting patterns; Use color to differentiate each study/group room
Large class;	Easily accessible and unobstructed view	Podium; Flexible furniture	Screen sharing; can access technology from the podium	Wireless audio connection	Various lighting patterns;
Campus classroom environment;	Classrooms (guidelines for using technology, reading materials available, adequate temperature and ventilation) Design classrooms for flexible future use where possible (e.g., enable future reconfiguration of classrooms). Natural lighting, adequate storage and control panels to simplify instructors' use of equipment in the classroom. Design classrooms to integrate with surrounding spaces (informal spaces, etc.)				
Learning activities in the campus environment	Different types of campus physical environments are needed to support a variety of meaningful learning activities. Ensure availability, and support and cost (both physical and virtual)(Technology & Places, n.d.)				

Pedagogy-Space-Technology Framework

A number of authors have proposed lists of design principles or the like as a guide in the creation of contemporary learning spaces. There is no generally agreed approach to the creation of new learning spaces and various groups promote a particular set of guiding principles for the creation of such spaces. Some of these principles list aspirational while others imply that they are based on experience.

Creating learning spaces that can be used to encourage students to be actively engaged, independent, lifelong learners was a key goal of 20th century pedagogy and the challenge of designing learning spaces. The point here is that there is a linkage between pedagogy, technology, and learning space design. This connection is evident within the framework of TPACK (knowledge of technological pedagogical content).

Long and Ehrmann suggest four ideas that become the foundation for developing future learning spaces: learning by doing, context-based, interaction, and learning location. (Huang et al., 2019) According to him, the learning process can only occur if students are able to seek and practice the knowledge gained themselves, then this can only be achieved when the material is adequate and interaction occurs, be it between students with the material, students with friends or educators, and students with the environment. Then the learning location concerns the place both physical and abstract which allows the learning atmosphere to occur.

They went on to list the characteristics of future learning spaces based on the development of the idea (Technology & Places, n.d.) that is:

1. Designed for use by people, not just a momentary display.
2. Optimized for a variety of learning activities, not just a collection of technologies. (Chaeruman, 2020)
3. Allows technology to be brought into space, rather than built into space.
4. Allows the technology to be invisible but can be used flexibly.
5. Emphasizes soft space.
6. Can be used for 24 hours.
7. Sound can be heard/without interference.

Each of the three elements (pedagogy, space, and technology) within each other affects each other reciprocally. For example, the desired pedagogy indicates the preferred way to organize and use space. In addition, the particular technology to be used may better be some pedagogy and spatial setting than other possibilities. Certain spaces limit (or present opportunities) to the introduction of certain types of technology, while certain technologies can affect the way teachers and students use space. In addition, the content to be studied and the students themselves need to be taken into account. (Huang et al., 2019)

Given the complexity and challenges of designing effective learning spaces that account for the content, learners, along with the pedagogy and technology involved, the

iterative planning cycle that supports being assessed and evaluated is often appropriate. Iteration through the PST framework multiple times during the planning, development, and subsequent life cycle of the learning space will most likely occur.

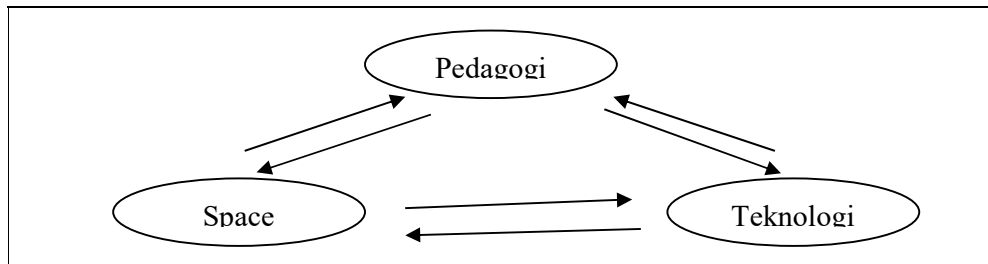





Figure 2.1 Pedagogical-Space-Technology (PTS) Framework

The order of items within the framework is intentional and important. Each of the three elements, pedagogy, space and technology, influence each other reciprocally.(Johnson & Lomas, 2019) Thus, to achieve the desired pedagogy, it is advisable to organize the appropriate form and use of space, just as a learning space, regardless of its intended use, will tend to shape what people do in it. Similarly, certain spaces limit (or present opportunities) for the introduction of certain types of technology, while certain technologies can affect how space is used by teachers and students.

The following is an example of a learning room arrangement that is adjusted to the pedagogical activities carried out in the learning process: (Huang et al., 2019)

Table 2.2 Linking pedagogical setting to spatial settings

Aktivitas pedagogis	Atribut pedagogis	Langkah-langkah proses	Premis perilaku	Ikon spasial
Menyampaikan	Presentasi formal Instruktur mengontrol presentasi Fokus pada presentasi Pembelajaran pasif	Persiapan dan hasilkan presentasi Sampaikan kepada audiens Menilai pemahaman	Bawa informasi ke publik Pimpinan instruktur Pengetahuan ada di satu sumber	
Menerapkan	Observasi terkontrol Master satu-ke-satu dan kontrol alternatif magang Tidak resmi Giat belajar	Pengetahuan ditransfer melalui Demonstrasi Praktek oleh penerima Pemahaman tercapai	Berpusat pada peserta didik Model magang	
Menciptakan	Berbagai disiplin ilmu Tanpa pemimpin Egalitarian Perhatian terdistribusi Privasi	Riset Kenali kebutuhan Berbeda pikiran Incubate Menafsirkan	Inovasi atau pengetahuan berpindah dari abstrak ke produk	

Berkomunikasi	Pengetahuan tersebar Pengiriman dadakan Kasual Giat belajar	Mengatur informasi Memberikan Menerima dan menafsirkan Dengan menjadim	Bagikan informasi Sediakan pertukaran cepat	
Pengambilan keputusan	Pengetahuan disebar Informasi dibagikan Set pemimpin menjadi arah akhir Situasi terlindungi Semiformal ke Resmi Pembelajaran pasif/aktif	Tinjau data Menghasilkan strategi Rencana Terapkan satu arah tindakan	Membuat keputusan	

Utilization of Learning Space as a Learning Resource Center

The Association for Educational Communication and Technology (AECT) states that learning resources are all sources in the form of data, people, and certain forms that can be used by students in learning, either separately or in combination to facilitate students in learning (Yaumi, 2018). achievement of learning objectives or provision of learning facilities or facilities or ease of learning for students. Learning resources can be developed by design and by utilization to facilitate learning activities (facilitating learning) and improve student achievement (improving performance). The learning resource component largely determines the success of learners in learning.

Based on this understanding, learning resources are everything that can be used to facilitate learning and improve student performance in learning. Learning consists of messages, people, materials, tools, techniques, and backgrounds, which can be used separately or combined, where the utilization can be specifically designed or simply utilized from everything that is already available.

Based on the classification, learning resources can be messages, people, materials, hardware, techniques, settings. All kinds of learning resources are aimed at making it easier for students to learn. The classification of learning resources designed and used or utilized can be described in the following Table:

Table 3. Classification of Learning Resource Types

Types of Learning Resources (Carnell, E., Lodge, C., Wagner, P., Watkins, C., & Whalley, 2005)	Definisi	Contoh	
		by Desain	By Utilizations
Message	That information must be channeled by others in the form of ideas, facts, understanding, and data	Study materials	Folklore, fairy tales, and advice
People	People who keep information or Distribute information. Not included in Function of develop and Manage learning resources	Guru, aktor, students, resource persons. Not included technician Curriculum Team	Resource persons, community leaders, office leaders, repondents
Materials	Something can be called Media/Software pregnant The message becomes presented through the use of tools	Transparency movies, slides, tapes, books, pictures, etc.	Relief, temple, statue, engineering equipment
Hardware	Something can be called media/hardware that transmits messages to be presented in software	OHP, LCD, proyektor slide, film, TV, camera, whiteboard	Generators, engines, tools, cars
Techniques	Prepared procedures in using teaching materials, equipment situation, and People to deliver messages	Lecture discussion sociodrama, Simulation lectures, and is learning	Games, sarasehan, ordinary/spotaneous conversations

Settings	Surrounding the situation in which the message is located Transmitted	classroom, studio, library, laboratorium	Parks, garden, marjets, museum, shops, banks, etc
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The existence of increasingly diverse learning resources, in their use needs to be managed systematically and centrally, so that the concept of learning resource centers emerges. In other words, learning resources need to be managed professionally by a special unit called a learning resource center. Learning resource centers are often referred to alternately without losing the essence of their meaning, with various terms such as learning laboratory, learning center, media center, learning resource center, learning resource center, and so on.

A learning resource center is, "A place – which can be anything from a part of a room to a building complex – that is erected specifically for housing, and provides for use, a collection of learning materials in various media, or to provide facilities for the production of the same" (Sumiharsono, R., & Hasanah, 2017). Merrill and Drob refer to a learning resource center as a Center for Learning Resources, defined as: "An organized activity consisting of a director, staff, and equipment housed in one or more specialized facilities for the production, procurement, and presentation of teaching materials and the provision of development and planning services related to curriculum and teaching on a public university campus". (Rahmat et al., 2023)

Based on these definitions, a learning resource center is a unit within an educational institution that functions to create learning effectiveness through the proper use and management of various learning resources. Or a learning resource center as a place for activities to be held, led by a chairman supported by all staff, production equipment, and adequate funds, who run the program actively in the design, development, utilization, management, and evaluation of learning. resources, to facilitate and improve individual and group learning and learning outcomes, as well as provide development and planning services related to curriculum and learning. Learning resource center is a special unit in an educational institution that functions to provide services to students, educators, and education managers in terms of procurement, development, production, maintenance, and utilization of various learning resources so that learning activities can run effectively and efficiently. efficient.

Learning resource centers are provided by institutions by providing a variety of learning resources that have been organized into learning systems to meet the needs of educators and learners. In this case, the learning resource center in the form of learning space becomes a support system to achieve educational goals and the learning process. Learning resource centers can develop and function according to the needs of the

institution or school. The most important thing in its application is the effectiveness of each function in supporting the achievement of learning objectives or competencies. In general, each learning resource center has a dominant function as its main characteristic. So that learning space as a learning resource center has the following functions (Prastowo, 2018)

1. Instructional System Development Function. This is the main function of the learning resource center. Learning resource center activities start from this function and then spread to other functions. This function helps teachers, lecturers, and facilitators design learning and choice options to improve the effectiveness and efficiency of the learning process. Learning space can be categorized as an educational instructional media because it is used as a learning medium;(Hartanto, 2016)
2. Learning Media Services Function. This function provides services for learning media needs to teachers, lecturers, and facilitators. This is done by choosing the right media, presentation techniques, and utilizing various other types of media. While services to students are in the form of media-based individual or group learning services, especially audio-visual learning media or other electronic media. Multimedia-based learning space is needed in this day and age, all service activities carried out online are part of the use of online learning media (e-learning space);(Mohammad Yazdi, 2012)
3. Learning Media Production Function. This function is related to the provision of learning media or teaching materials that cannot be obtained through tradable resources. Learning resource centers must produce media that are appropriate to the needs of the existing curriculum;
4. Training function. This function is related to efforts to improve the ability of human resources, both educators and other education personnel as well as the community as users;
5. Administrative Functions. This function is responsible for the management of services, learning resources, and administration of other functions. Thus, the service system to users of learning resource centers can take place in an orderly and smooth manner. Campus learning space can facilitate management and administration processes (Kolb & Kolb, 2005) such as registration, payment, access to learning resources, and others. The learning resource center doesn't have to have all the functions at hand, but certainly some of them. The main one is the effectiveness of each function in achieving learning objectives or competencies.

Learning resource centers in the form of learning space in schools, universities, and educational institutions need to be developed on the basis of a clear vision and mission, goals, functions and development standards, namely:

1. Consideration. The rational reasons for the need for learning resource centers at the level of educational units, universities and educational institutions are (a) approaches and teaching and learning methods cannot be supported optimally, (b) books and others. printed materials are no longer the main source of learning, but rather various other learning resources; (c) the development of learning theory leads to self-learning, paying attention to differences in student character, student-centered, and teachers better function as learning designers and leaders and tutors, (d) learning resource centers will coordinate all learning resources, information and communication technologies in schools, universities, and other educational institutions for learning and teaching, so that the learning process becomes more effective; (d) Provide relevant learning resources during the COVID-19 pandemic.(Chaeruman, 2020)
2. Goal. The learning resource center developed must have a clear goal, namely ensuring the availability of a learning environment that is suitable for learning and teaching purposes, providing opportunities for students to utilize each learning resource, encouraging students to learn independently, developing the ability of students to learn. find and explore, as well as help educators to develop and apply various learning methods.
3. Mission. The mission of the learning resource center is developed based on the general objectives that have been set, namely providing various learning resources, providing personnel who can help students to use various learning resources, creating an environment and atmosphere that motivates students to learn, providing various conveniences for educators to carry out their duties professionally, and improving the quality of student learning processes and outcomes.(Banyard & Underwood, 2008)
4. The learning resource center has the main tasks according to its five functions.
5. Learning resource centers should have facilities and infrastructure such as self-study rooms, shared study rooms, and collections of subject materials for each subject or subjects.(Hartanto, 2016)
6. The learning resource center must be able to decrypt the constructive role.
7. The learning resource center should be equipped with a management system with a clear organizational structure so that it does not overlap in the implementation of tasks.
8. Learning resource centers need funds to operationalize all their functions

Some of these components need to be considered in developing learning resource centers both in schools, universities, and other educational institutions. Thus the developed learning resource center has a clear structure with a very constructive function of helping educators and learners in the learning process.

4. CONCLUSION

The learning room is a place or environment where the teaching and learning process takes place, the place in question can be indoors, outdoors, or virtual space.

Learning spaces are designed to support, facilitate, stimulate, or enhance learning, and teaching. Learning spaces can be designed to support listening and note-taking (for example, lecture halls or traditional classrooms). Some principles that must be considered in designing a learning space include learning models, layouts, furniture, technology, lighting and sound.

One of the efforts to improve education in Indonesia is to provide adequate and affordable educational infrastructure for educators and students. That is, straightening the direction of education aims to improve the quality of education. These improvements are mainly directed at improving the educational process because the learning process is a factor that directly determines the quality of learning. One of the things that need to be considered in the learning process so that it takes place professionally is the provision of adequate learning resources. Therefore, quality improvement is also related to the importance of developing a learning resource center that can provide learning resources for the benefit of student learning.

The development of learning space as a learning resource center can be done by referring to the five functions of the learning resource center, namely the instructional system development function, learning media service function, learning media production function, training function and administrative function.

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