On the Creation of Informal Learning Space in Universities

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Abstract: Informal learning space refers to the space environment used by schools to stimulate students' autonomous learning and self-organizing learning behavior in addition to formal teaching space. As a powerful complement to formal learning space, informal learning space can provide personalized learning field, promote collaborative communication, and effectively use idle space. For this reason, universities should attach importance to the development and creation of informal learning space. On the basis of following the principles of cost, convenience and comfort, universities should reasonably construct informal learning space according to its location distribution, service population and use function.

Keywords: Informal Learning Space; Formal Learning Space; Learning Environment; Space Production

As the spatial carrier of students' learning, university campus is the main place where students take part in learning behaviors. With the development of science and technology and the change of student-centered education paradigm, providing students with a high-quality learning environment has become an important aspect of improving the quality of education. Although the construction of campus space in each university is the product of a specific historical period, it clearly shows the unique flavor of the integration and contact between the geographical environment and the cultural background, but the composition of campus space is not the same, French sociologist Lefebvre "space production" concept, which leads to the expansion of space, expansion and development. The informal learning space accompanying the informal learning concept is formed from the idea of space production is the production and sublimation of the campus learning space is the extension and supplement of the formal learning space. From the perspective of the future development of the university, to improve the quality and efficiency of education cannot be separated from the design and creation of space, while the creation of informal learning space provides a new spatial perspective and analysis dimension for the current university teaching reform and campus construction.

Basis and Significance of Creating Informal Learning Space in Universities

Learning space usually includes the whole learning environment of the school. It is the material entity in the education system. Consists of the whole environment of the campus; a single building and other various places to promote learning can be divided into physical space and virtual space. Among them, Campus Entity Learning Space can be subdivided into Formal Learning Space and Informal Learning Space. The formal learning space refers to the learning environment that takes place in a designated room. According to a specific schedule, to carry out teaching and learning activities within a planned time range, mainly includes classrooms, auditoriums, learning areas such as laboratories; informal learning space refers to the self-organization of schools that are used to stimulate students' autonomous learning in addition to the formal teaching space. The spatial environment of learning behavior; virtual learning space mainly covers learning management system, social networking sites or online environment. Sequential with respect to formal learning space, Institutional and planning, Informal learning space defined here refers to such a learning place: Students learn on the premise of self-setting can choose learning content, Learning methods and learning partners, Learning can follow the plan or follow the plan. Temporary meaning is a kind of learning space field, which focuses on...
students' autonomous needs, highlights human nature, functional complexity, auxiliary, accessibility and attraction five basic characteristics.

Whether from the perspective of space sociology, or from the perspective of architecture — psychological path exploration, or relying on the perspective of pedagogy, can provide the necessary theoretical and practical basis for the creation of informal learning space in universities.

The traditional idea is that space is fixed, unchangeable. But, Modern Concept Considers, Space Is Uncertain, Non-immutable, Self-Production and Expansion According to People's Will and Needs. In this sense, space is not only a physical concept, also has sociological implications. Lefebvre defined more than 60 kinds of spaces in his book Space Production and passed on an idea: Space can not only be expanded but also produce itself. This argument has been widely concerned and discussed. [4] Focus on university campus, university from initial site selection, design, construction, until the completion and establishment of various functional buildings means the initial setting of university buildings. The construction process of the campus is initially interwoven with corresponding educational and teaching ideas, financial investment benchmark, various elements of cultural customs and geographical customs. Once the overall campus planning is completed, the formal learning space will be determined with the characteristics of materiality, system and subjectivity, provides a fixed place for students' learning behavior. Formal learning space is the original construction of learning space has relative stability individuals cannot change at will. However, campus space configuration can't be completed at one time, always need to adjust and perfect again. From the perspective of space sociology, educational activities or learning activities themselves directly create and generate new spaces, that is, continuously produce and expand space according to learning wishes and needs. Informal learning space is created by the idea of self-production and continuation of space, as a self-constructed auxiliary learning area. Informal learning space starts from the user's body sensitivity. Adjusts and transforms the elements of formal learning space while expanding the learning area. Improves the rigid and institutionalized management of formal learning space. Strengthen the awareness of self-learning. And self-learning ability, can adapt to users' autonomous needs from the time of use to the applicable population to the rules of use, to provide a demonstration for learning subjects, reflection, to develop its own stage. As far as the relationship between the two is concerned, Informal learning space is the disintegration and integration of traditional learning space. There is no absolute dividing line between formal and informal learning space. Under certain conditions, it can even transform into each other, supplement each other. This fusion can stretch the learning range, produce more supportive learning space.

What needs to be emphasized is that school architecture and what we call learning space are actually different concepts. School architecture is an educational activity place set up for educational purposes. Therefore, School architecture is often called “Solidified Note”. Learning space is perceived by the subject, is a subjective environment based on architectural materiality. [1] That is to say, from a psychological point of view, if a building entity wants to really serve learners, it needs to pay attention to subject differences and subject perception. Different from Learning Behavior of Primary and Secondary School Students. College students educated in higher education, different professional goals and learning tasks, greater consciousness of autonomy and innovation, more sufficient individual learning time at your disposal, increased learning freedom. So. For college students, traditional classroom teaching is no longer the whole focus of learning, free control of learning can stimulate their interest in in-depth learning, team cooperation and communication are put on the agenda, learning behavior is more ubiquitous, any corner of the school may be the space for students to learn. These learning characteristics of college students need corresponding learning space as a support. Changes in learning behavior habits will also trigger the production and change of learning space. Put forward new requirements for the design of campus learning space. The proposal of informal learning space adapts to the learning style of college students, it can create the learning environment needed by learners, respect the learning will of learners, make up for the limitation of formal learning space, create learning atmosphere, induce more learning behaviors.

The spread of constructivism theory has changed the modern teaching paradigm. Educators have gradually realized the importance of active learning, discovery learning and collaborative learning. The change of new educational concept has also brought about a change in the type and functional mode of teaching buildings. Knowledge is not only taught by teachers on specific occasions, free learning and discovery learning have also become effective methods to acquire knowledge. The construction of informal learning space is the focus adjustment of the current new teaching paradigm and
learning mode. It provides sensory stimulation to learners. It is conducive to stimulating learners' learning intention, encourage information exchange between each other. Promote knowledge transfer and application, is both the material basis of learners' learning, and has become the source of learning experience. Furthermore, the prevalence of informal learning theory and ubiquitous learning theory is an important support for the creation of informal learning space. Scholars usually use Pareto principle to describe the value of informal learning, that is, the only 20% knowledge in one's life comes from classroom teaching or work, accounts for 80% knowledge comes from self-study and communication with others. Therefore, university buildings should not only serve as a single space carrier for traditional teaching, should also provide a platform for teachers and students to communicate and learn after class, support students' learning and innovation to the greatest extent by creating open informal learning spaces. Just like the concept advocated by ubiquitous learning, informal learning space is not only the guarantee of learning place, or the extension of learning time, can accommodate short-term learning, is easy for learners to piece together fragmentary time, forms seamless connection with modular learning, thus forming the habit of lifelong learning.

Informal learning space is an extension of formal learning space, but it is by no means dispensable. In addition to supplementing learning space, expanding learning range, also plays many irreplaceable important roles.

1.1 Informal Learning Space Can Provide Personalized Learning Field.

whether it is formal learning space or informal learning space, school space itself is only a means, a mode of production, its ultimate goal is to adapt to the changes of education and the needs of educators through continuous adjustment and reorganization. Overemphasis on the functional distinction and mutual isolation of campus space will limit the personalized choice and diverse needs of users. Overemphasis on the rules and uniformity of learning space will make learning subjects seek a comfortable and inclusive autonomous learning environment. Thus the informal learning space corresponding to formal learning space arises at the historic moment. Whether people perceive it or not, any change in space will have an important impact on people living in it. Different environmental spaces will give people different feelings from psychology to physiology will also have different effects on learning activities. Informal learning space is inspired by consumer service ideas in corporate culture. Pay attention to observing and understanding the needs of learning users, can satisfy the spatial orientation and life preference of learning subjects, Give them choices, Freedom of judgment and physical placement. Even the creation of informal learning space will change the track of previous learning space, change the form and use method of inherent space, form a kind of “Anti-cultural phenomenon” [6], encourage and stimulate people's learning behavior, initiate the update of learning state from the change of learning place, thus improving learning efficiency. This is the spatial participation that informal learning space brings to students. Selectivity and Achievement. It gives differentiated care to different students. Makes learning boundaries tend to blur. [7]

1.2 Informal Learning Space Can Promote Collaborative Communication

The essence of educational activities is a kind of teacher and student, interaction and collision between students, effective development of this interaction need to stimulate each other's cognition, emotion and behavior dynamic generation. In a certain field College students are quasi-social members who are about to enter the society. Communication and communication ability is one of their essential qualities. This requires a specific field to support individual and individual, Dialogue between individuals and collectives, cooperation and sharing. However, in reality, we often encounter such a situation. When teachers and students are discussing a certain problem enthusiastically in the classroom are still not satisfied. The bell rings, other teachers and students who need classes will enter the classroom one after another. The ongoing discussion is forced to be interrupted because they cannot find a suitable place to continue. The learning enthusiasm and thought spark that have just been aroused are instantly doused or students need group learning or team cooperation, but cannot find a fully equipped place suitable for communication, so that mutual learning cannot be carried out, and the team cooperation ability cannot be improved. Under the impact of modern teaching concepts focusing on relationship and communication. The creation of informal learning space is to provide learning groups with tools and places for interactive activities building democratic teacher-student relationship and loose partnership. It makes listening, Discover, Coexistence of inquiry and cooperation make the place where the body is located instantly become a learning place, and become
1.3 Informal Learning Space Can Make Effective Use of Idle Campus Space

The production of campus space is a gradual process or even a repeated process. Informal learning space as the product of the individual needs of learning subjects reflects the competition and contest between body rebellion and interpersonal relationships, is the secondary production or reproduction of school space. [8] Migration with Time, modern technology update and transformation of teaching scenarios, goods and space will change many time, filling vacancies on the premise of meeting main needs, effective use of idle space, increase space utilization rate.

There is no doubt that putting some desks and chairs in many idle places can attract students to sit and study to achieve the effect of not saying a word about peaches and plums, debugging removable space or adding necessary learning materials can create a multi-functional informal learning space, reducing traffic area in limited school space, enriching space level, providing students with various space scales and free and open learning place. Of course, informal learning space is a learning place with compound functions, covers infiltration of cultural atmosphere, extension of learning time and many other functions, is a more active area in the material production transformation of schools.

2. Principles and Strategies for Universities to Create Informal Learning Space

The human nature of informal learning space is the logical starting point of its creation. Its functional complexity is the value meaning of its existence. In addition, universities should also follow the following principles in creating informal learning spaces.

First, cost principle: Auxiliary. Informal learning space is the auxiliary area of formal learning space, whose fundamental function is auxiliary learning. Therefore, as a secondary learning space in hierarchical space. The process of creating informal learning space should be compatible with the overall architectural environment of the campus and integrated with the formal learning space. On the basis of considering the overall planning of the campus should fully consider the school's own geographical environment and human environment, such as campus management, cultural atmosphere. From the perspective of the overall development of the school. The creation of informal learning space should be done according to the school system. According to one's abilities, the selection and construction of various informal learning spaces should be in line with the surrounding environment. Cost should be taken into consideration, neither blindly imitate the campus planning of other schools nor forcibly insert, more importantly, Large-scale construction, destroy the original buildings or campus. In other words. The creation of informal learning space is an economic, environmental protection development and utilization process, reasonable arrangement and inlay. The establishment of informal learning space from multiple aspects and angles should be based on the premise of both cost and benefit.

In fact, informal learning space is a space design with very clear purpose, in order to avoid unnecessary waste of resources. In the early stage, we should fully investigate the existing space usage in schools, investigate which types of space students gather are in short supply and which are in surplus, so as to transform campus space in an economical and reasonable way, to meet the needs of students' learning, reduce construction costs as much as possible.

Second, convenience Principle: Accessibility. The original intention of the design of informal learning space is to provide convenient learning places for students, to prevent them from wasting their energy and time on running and finding learning places. Therefore, accessibility, and openness, flexibility and diversity should also be reflected in its facilities construction and use rules in order to provide convenient learning environment for students, to facilitate the communication between teachers and students before and after class and the learning of students. Specifically, the nature of the objects that make up the space, State, the difference in volume and renewal period is very large, and the design of informal learning spaces in different positions has different functions, combination, selection, the principle of replacing these complicated spatial elements is to provide convenient services for students' learning. If conditions permit, its spatial layout should choose as many movable facilities as possible. This can be adjusted and converted according to the needs of users. In addition, the opening hours of closed informal learning space can be appropriately extended, it can be opened all day when necessary. At the same time, we should pay more attention to students' rigid demand for modern technology.
Informal Learning Space is a Place for Students to Actively Construct Knowledge.

The support of new technologies can provide them with more convenient conditions for self-study. Due to the deepening demand of portable devices on the network, coverage of wireless networks is essential. Power outlets coordinated with this, plug and play projection devices, electronic touch screen and other facilities also need to be installed more and more in informal learning spaces. In short, no matter what adjustments are made from fixed to flexible, from cautious to relaxed, from regulatory constraints to safety and convenience, is the meaning basis of informal learning space settings.

Third, Comfort Principle: Attractiveness. An important factor in the popularity of informal learning space is its comfort and aesthetic feeling. Elegant environment often makes people stop. While enhancing the willingness to use, it also makes learners have the desire to communicate and gene rate's thinking innovation. This is also the symbolic difference between formal learning space and informal learning space. The same material building entity. The two space designs have the same purpose, but because of the weak institutional and non-mandatory use rules, informal learning space is often filled with a more relaxed and free cultural tone, also contains the idea of secondary production of campus space by users and distributors. Therefore, to attract learning subjects, to improve efficiency, you need to create a comfortable learning atmosphere, hardware facilities such as desks and chairs should be linked to learning purposes, material, performance, shape should be both comfortable and practical; lighting equipment should be able to relieve students' visual fatigue in learning, and help learners to quickly transition and become familiar with the new environment; cleanliness and tidiness are the gist of learning environment design, continuous maintenance and cleaning are essential; overall tone and space shape should be coordinated, carpet, hanging picture, color, lighting and learning facilities should be organic combination, artifacts and space decoration should show spirit, creating learning atmosphere with specific purposes, etc. All these measures will make the informal learning space more attractive.

Informal learning space is an effective use of idle campus space is also a reasonable design to meet the learning needs of different learners. According to its location distribution, serving the crowd and using functions, can make the following three ideas for the creation of informal learning space in universities:

1. According to its location distribution, can create informal learning space in corridor hall, campus outdoor place, three kinds of places in private living area. The corridors and halls in the teaching building are very close to formal learning spaces, especially classrooms. Selecting these places to create informal learning spaces can provide timely communication places for teachers and students. Teachers and students can discuss unresolved classroom problems nearby. Deepen communication and understanding between teachers and students, can also allow students to organize classroom notes and study classroom problems, can also be group meeting provides a place, to facilitate them to carry out group or project activities. At any time after class, in class, campus outdoor places including gardens, lake side, playground square, outdoor places such as parkway, students' learning behavior not only happens in closed indoor environments, can happen in any corner of campus, people's thinking leaps more without roof and boundaries, learning atmosphere is looser and free. According to this, schools can choose quiet, places with beautiful environment to place some desks and chairs for students to read in the morning, discuss or rest, change mood. Private living area mainly refers to student dormitories or apartments. Schools can build study rooms and reading areas in dormitories, allows students to continue their studies without affecting the rest of other dormitory personnel, can also place talking seats in the corridor, facilitates students to discuss topics, and even some spaces can be set as solitude and leisure areas. For example, the soft sofa seat beside the vending machine, the call area on the public balcony are all space designs based on personalized needs.

2. According to its service demand, can create individual learning space, informal learning space such as group communication space and public learning space. Individual learning space is built to support learners' individual focus on learning, to prepare for lessons, Review after class and prepare for various examinations and other activities. This type of space requires relatively simple facilities, but must pay attention to certain privacy. When learners focus on learning, often likes to look for similar “cave” same place, this kind of learning space needs to be designed into semi-closed or closed form, to achieve the function of protecting visual privacy density and auditory privacy density. When students are thinking in a divergent way and concentrate on thinking, personal learning space is their “learning cabin”. Group communication space is an informal learning space type set up to promote collaborative learning. This kind of space can be designed according to the number of interactive people that can be accommodated, should have both openness and closeness, it
is best to use glass insulation. A certain degree of transparency can not only prevent passing pedestrians from disturbing the ongoing learning behavior, but also enliven the learning atmosphere of the space. At the same time, some flexibly re-configurable equipment, such as movable tables and chairs, whiteboards, etc., should be configured as far as possible so as to facilitate communication between groups or teams. This kind of space is a spare place for random meetings and brainstorming, can be used not only for teachers to guide students, but also for students to discuss and learn. public learning space is an extension of reading room, library, many students do not like being alone, while studying but hope to think in a relatively quiet and other people's presence. in order to make up for the shortage of library space, change the solemn learning atmosphere of the library, it is necessary to create this type of learning space. university public space, not only material space or geometric space, but also cultural space or perceptual space. This public learning space is similar to the learning effect of cafes, Beautiful environment, Comfortable facilities, traditional desks and chairs for group learning, Some soft sofa seats, which can be sitting or lying down, and are well-equipped for learners to control and use freely. It can not only enable learners to concentrate on in-depth study but also benefit learners' divergent thinking, and unconsciously accept cultural edification.

3. According to its use function, can create storage space, information search space and display space and other informal learning space. Storage space is an auxiliary space set around the learning space, more lockers of different sizes, for storing books or articles for daily use. Informal learning is random and irregular, timely extraction of learning materials and effective storage of learning results are beneficial to stimulate students' learning behavior and intimate storage space will bring students a sense of security and belonging, and further increase students' learning frequency. The function of data search space is to provide students with necessary retrieval tools for learning, learning materials. Different from electronic reading rooms and libraries, as the information search space of informal learning space is mainly mini and portable in the configuration of electronic equipment. Books and magazines, mobile terminals should also be reasonably arranged according to the space to achieve the purpose of saving space. For example, books, newspapers and periodicals mainly focus on retrieval and introduction of major categories, provides necessary and extensive guidance to students, only uses a small number of desks and chairs at the same time, provides less long-term reading services, prevents students from occupying equipment for a long time and influencing others to use. Exhibition space is a platform for exhibition, small to blackboard, poster, large to showroom, presentation hall, all are exhibition works, space for learning and communication. Different areas in the campus display different contents, but the theme should focus on students' learning, to popularize knowledge in a relaxed and relaxed state, to carry out education; to combine physical objects with multimedia in form, to match lighting with atmosphere in environment, to make the display space become a scenery line of campus culture.

In short, informal learning space is an important material foundation to support college students' free and independent learning, it enriches the culture and life of the university, makes ubiquitous learning possible. If formal learning space emphasizes orderly system, then informal learning space is “body” looking for independent and multiple choices of the garden. Informal learning space enriches and enriches the university campus, which is not only a visual landscape, but also means to accept fresh ideas and behaviors from the psychological level up to the space preset should be strongly advocated and promoted in universities.

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