

Research on Learning Space Management Transformation

Lu Cui

East China Normal University, Shanghai, 200062, China

Abstract: Learning space management transformation is an inevitable guidance for learners' increasingly abundant learning needs and technological innovation. Learning space management should be transformed for students, teachers, and schools to form a new pattern that centers on learners, which is led by professional teachers, and breaks the inherent shape of schools. The development of learning space management transformation needs top level design from top to bottom and basic level exploration from bottom to top, meantime combining the overall construction with key breakthroughs. The learning space sharing mechanism proposed in this research will provide references for the learning space management transformation.

Keywords: Learning space management; Student-led; Teacher classification; Space sharing

Corresponding Author: Lu Cui, E-mail: cloristsui@163.com Tel: 18321526118; Mailing address: Department of Education Management, East China Normal University, No. 3663 Zhongshan North Road, Putuo District, Shanghai, 200062, China.

Author's Information: Lu Cui, female, from Jinzhong of Shanxi Province, master degree candidate at Department of Education Management, East China Normal University. Research direction: school management. Mailing address: Department of Education Management, East China Normal University, No. 3663 Zhongshan North Road, Putuo District, Shanghai, 200062, China.

Introduction

In recent years, the popularity of the Internet has broken the boundaries between schools and classrooms.

Learning has changed from a fixed time and a fixed place to a form that can exist anywhere, anytime, and these factors motivate that the classroom model must change as well.^[1] Classroom activities are conducted on the basis of learning space. Therefore, changes in classroom patterns lead to changes in learning space management. This research will explain why learning space management needs to be transformed and who it is to serve, and then put forward recommendations and suggestions for learning space management, thus promoting the development of new forms of learning.

1 Why Do We Need to Learn about Space Management Transformation?

In the 1990s, a teaching reform project named SCALE-UP (Student-Centered Activities for Large Enrollment University Physics) in the United States opened a prelude to the study and practice of learning space worldwide.^[2] At present, China's representative in this field is the "Future Classroom" project of East China Normal University. In the study of academic places by scholars, the concept used to refer to this place has also gradually changed. In the past, people often used "classrooms" and "teaching spaces" to represent places where teaching activities took place.^[3] In the course of the study, the central position of learners was reiterated, the fixed layout of traditional classrooms was broken, and the penetration of technology greatly changed the place where the original teaching activities occurred. Learners can more actively conduct learning activities at any time and place. Under this change, the concept of "learning space" was proposed. Compared with the original "classroom" formulation, "learning space" is more appropriate. Therefore, we can see that under the

influence of this idea and the support of technology, traditional classrooms have gradually introduced multimedia Internet technology, whiteboards, and richer cultural installations from simple blackboards, lecterns, desks and chairs. This is a naturally occurring change in the learning space driven by the role of technology in education and the increasing learning needs of learners. However, while learning space is changing, we have also seen “invariability” in the management of learning space. What remains unchanged is the stability of the class teaching system. It is the ingrained role of the teacher and the threshold for schooling that is difficult for schools to shake. Class teaching system, the product of the era of industrial revolution, developed rapidly under the requirements of the stimulation of the industrial revolution and the requirement of universal compulsory education. Until today, it is a teaching organization applicable worldwide. Teachers are selected on the basis of assessment criteria formulated by educational decision makers and entered the education system and teaching positions. Students study under the preaching and teaching of teachers provided by the current education system. Schools as an important carrier for learning space, its opening threshold is even more difficult for ordinary people, it requires a lot of capital, space and government approval and so on. These are important factors in learning space management. The “change” of learning space should not only be reflected in the upgrade of internal hardware and the participation of technology. Changes in software, that is, management factors, are more likely to affect learners’ learning efficiency and experience. The rapid development of the current economic level and the continuous innovation of technology have given us a great deal of possibilities in the management of innovative learning spaces. At present, the rich and eager learning needs of learners have made the change of learning space management imminent.

2 Who is the Learning Space Management Transformation for?

The learning space includes the entity learning space and the virtual network learning space. The design, arrangement, use, and screening of teachers of the entity learning space and the virtual learning space belong to the category of learning space management. Learning space management should be transformed for “students, teachers, and schools”, focusing on

student-centeredness, enriching the connotation of teachers’ roles, and breaking existing schools’ traditional organizational forms.

2.1 For Students—Student-Centered Learning Space Management

Dewey, a Western educator, put forward the “child-centered theory,” emphasizing that all activities of education should be centered on children. The development of the economy has made educational resources more and more abundant. This allows people to think that education should return to the essence of “human” and pay more attention to human development in teaching activities. Learning space management is no exception. The design and application of learning spaces must also be student-centered. Therefore, the students’ role in the learning space is not only learners and users, but also designers and managers. The learning space belongs to the students and should serve the student’s learning activities and guarantee the smooth progress of the learning activities. Everything should be focused on the convenience of student learning instead of the standardized layout and the authority of the teaching staff. At the same time, according to the learning content, the learning space will be more or less adjusted. To a lesser extent, the movement of tables and chairs, the attachment of learning materials on the walls, the talks, the exchange of specific places for space, and the time for learning to use the space, are all students’ right to participate in management. Only the actual participation of students can really make the use of the learning space easier for students.

2.2 For Teachers—Professional Teachers Responsible for Learning Space Management

The transformation in learning space management can’t make teachers feel more oppressed or even affect normal teaching. Teaching staff be endowed with richer role connotations in the learning space. That is to say, as one of the managers in the learning space, teaching staff should be further expanded in the role of traditional teaching. However, this expansion does not mean that any teacher needs to have more than one job. She needs to be a good teacher and a space designer. Such transformations will only make the teaching staff agonized and increase the sense of job burnout. From the perspective of “for teachers” and for the effectiveness of realistic teaching activities,

we advocate the classification of teachers. Traditional teachers can focus on the design and teaching of teaching content. On this basis, we should also absorb part of teachers who focus on learning space management. In the United States AltSchool, this idea has been put into practice. In addition to full-time teachers, AltSchool is also equipped with “learning engineers.” The school’s learning engineers are similar to the teachers we mentioned that focus on learning space management. They designed a product called “Alt Video” to be placed in the learning space so that the learning process can be recorded at any time. It is easy to feedback to teachers (teachers who focus on teaching) to improve teaching, feedback to parents to learn more about children and help learners. It records the process of learning and growth. In addition, they also designed and managed the virtual learning space, which is AltSchool’s online platform, to provide learners with more space support.^[4] In the learning space of AltSchool, the teacher of the learner is not only the teacher of instruction but also the space manager. The class division of the teacher not only does not put pressure on the teacher group, but also makes each individual perform their duties. It is important to keep every activity in the learning space tightly organized.

2.3 For Schools - Learning Space Management Breaking the Inherent Form of the Schools

In the past, the management of the learning space was included in the form of school. With the development of the times and technological innovations, we can observe the changes in this situation. The advent of the MOOCs era has allowed the rise of virtual learning spaces. Some of the online learning spaces are still managed by traditional schools. In addition, some learning spaces are developed by enterprises and managed by competent persons. The emergence of this diverse learning space provider is agitated. The traditional learning space management form. Now, in addition to technology driving the development of online learning space, we can also discuss another form of entity that is different from the learning space provided by traditional schools. Professor Minghua Li of East China Normal University, as early as 2015, proposed the idea of a future school running mode. He believes that future teaching activities can be handed over to “Confucius Contemporary Confucius” to organize. “Contemporary Confucius” refers to the

student’s learning tutor and accompanies students to carry out various learning activities. In the form of teaching organization envisioned by Professor Li, this actually presents a form of educator education. Educators cannot have huge school capital, they cannot have huge venues, and they only need to provide personalized and targeted instructional design. The learning space can be in the student’s living room (“living room school”), or the school’s laboratories, playgrounds, and even more specialized learning venues. For example, when studying biology, you can go to the Natural Museum and go to the wild when you study geography. and many more. This kind of teaching form uses different learning spaces more flexibly, so that the learning space is no longer just a common place for students to carry out the learning, but is connected with the learning content to truly match the space selection and management of learning activities.^[5] In this mode, the school’s grounds can be rented to demanding school-run organizations. Various socially available places can be used as learning spaces. The development of traditional schools is more inclusive and more diversified, which is considered as a new attempt of the sharing economy era.

3 How to Implement Learning Space Management Transformation

3.1 Top Level Design from Top to Bottom Integrated with Basic Level Exploration from Bottom to Top

Learning space management reform must be done with top-level design to ensure that the direction does not deviate from the right track. Similarly, the practical significance of grass-roots exploration cannot be ignored. It needs to be flexible to formulate reform plans and explore more appropriate roads based on its own reality.

Learning space management changes cannot be separated from the top-level design. In terms of learning space management, the school’s internal requirements, teacher-student ratios, and minimum standards for class hardware facilities all require the introduction of relevant regulations. Schools, companies, and society need to be encouraged and related regulations. From the perspective of the school’s internal learning space management, especially for some rural areas, the state should vigorously promote the elimination of extra-large classes, strictly control the teacher-student ratio, and ensure the investment in infrastructure in education

funding. Encourage and even make rigid provisions to classify teachers and ensure that there are full-time teachers for learning space management. The state should provide relevant training and support for this part of full-time teachers. In the connection between schools, enterprises and society, the state should formulate standards that schools can use to screen out-of-school learning spaces. For example, the learning space provided by enterprises must be equipped with equipment related to teaching content, and must be equipped with security personnel. Can also encourage or allow the school's learning space to be open to the society. Also in this process, the country needs to do is to promulgate rules to standardize the sharing of learning space, and to establish regulations for individuals or organizations that borrow school space for learning. For the purpose of learning, borrowing is only available on Saturdays, etc. When the school lends the learning space, it needs to review the borrower's teaching activities. Throughout the entire process, the country's top-level design is designed to give the learning space management norms to ensure that the direction of change does not deviate from the right track.

In addition to the top-level design, the basic level exploration of learning space management transformation has been carried out in some schools. Through the study of some school cases of innovative management learning spaces, the following experiences can be summarized: (1) the traditional "seedling" layout is broken down. Desks and chairs become more flexible and free to move. Changing the rigid layout of desks and chairs is almost a consensus among all research and learning space scholars.^[6] At present, some schools have finally implemented them in practice. They have chosen to replace the square desks with round tables, or even to add more casual sofas. Firstly, it is convenient for students to explore cooperatively and inspire their enthusiasm for active learning. Secondly, they can also create a relaxing learning atmosphere and get rid of the sense of seriousness and oppression in the traditional layout. (2) The function of a specific learning space is no longer singular. In traditional schools, classrooms, laboratories, conference rooms, and other different learning spaces are divided very carefully and have clear functions. Learners enter different learning spaces to complete different types of learning activities. In schools that manage innovative learning spaces, we can see the integration of the functionalities of the

learning space. Due to the flexible arrangement of tables and chairs and the configuration of technical equipment, the individual learning spaces can carry more functions. Students can complete a series of learning activities such as study, discussion, hands-on operation, and distance learning in a single learning space. (3) Learners are the leading players in the learning space. The traditional classrooms carry teaching activities that are "student-centered and teacher-oriented." In the learning space, learners are both the subject and the leader. Project Based Learning is a common way to guide learning activities in the learning space. Students explore the driving issues in a real situation.^[7] The teacher participates in assistive activities as a secondary role, so such changes necessarily make the learner one of the managers of the learning space.

3.2 Overall Construction Combined with Key Breakthroughs

The transformation in learning space management needs to be clear about the overall direction of construction, and breakthroughs should be made one by one gradually. Since there is currently no overall framework for the transformation of learning space management, this paper combines the background of the sharing economy, summarizes the current experience of internal management of learning spaces, and analyzes the learning needs of learners at the present stage. The paper addresses the form of future learning space management which has a specific vision and design, as shown in Fig.1 at below.

In the management of learning space, the school-based learning space is the main theme, and on the basis of this, enterprises and socially available resources are included. At the same time, the channels for opening up the learning space in the school are also opened to maximize the use of learning space within the school. The following diagrams are interpreted as follows: (1) The main part of the schematic diagram, that is, the middle vertical part, is the closest to the current school learning space management model, which is to give learners at the level of improving learning space technology equipment and flexibly laying out infrastructure with independent support for learning activities. Learning space management transformation also requires good technology and facilities for protection. The difference is that in the future learning space, the professionalism of managers must be more

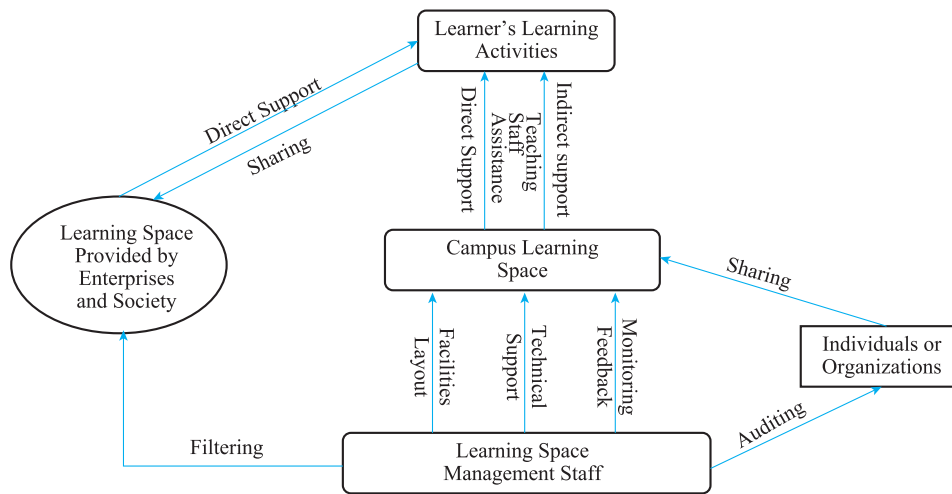


Figure1. Learning space management diagram

prominent. Professional management personnel will provide facilities for the learning space, technical support, and feedback on learning activities conducted in space through facilities and technologies. The learning space under professional management will provide direct support for learners, and at the same time provide indirect support to learners through the help of the teaching staff. The management model is learner-centered, and everything is based on learners' active learning activities. (2) On the left side of the diagram, there is a learning space that can be provided by the company and society in parallel with the on-campus learning space. The learning space on campus is no longer able to meet the increasing learning needs of learners. The available learning space in enterprises and society contains many learning resources. It is difficult to achieve within the school learning space and can provide strong support for learning activities. In the era of sharing economy, space sharing between enterprises and society will inject fresh blood into the learning space management reform. For enterprises and socially-available learning spaces, management personnel need to be screened in a certain way, and they are selected based on standards and in line with the needs of learning activities. (3) On the right side of the diagram, "person or organization" is connected between the learning space manager and the learning space, that is, sharing the school's existing large-scale learning space with these "individuals or organizations" following the "share" concept. "While maximizing the use of benefits, it can also reflect the inclusiveness of traditional teaching organizations." For this part of the management work, managers need to review the content of the learning activities and certain

supervision to ensure that the learning space is used for learning and that the school learning space is shared in an orderly manner.

In the overall construction of the learning space management reform, key breakthroughs should be based on "sharing." Whether it is the sharing of corporate, social learning space or school learning space, it is only an idea or only a preliminary attempt at the current learning space management level. In the era of sharing economy, from the sharing of transport to the sharing of everyday products, the concept of "sharing" undoubtedly creates a model for maximizing the value of goods.^[8] The operability of learning space sharing lies in the existence of resources and the docking of needs. Since there is space available and there is a demand for utilization of this space, sharing is obviously established under this condition. The difficulty of learning space sharing lies in how to make sharing more orderly and to expand its value without destroying the value already created in existing space. How to ensure that the business and social space are functioning normally, and open space and corresponding resources in schools become a routine operation? How to make schools in the normal development track, while carrying more various education forms? These are both difficulties in the transformation of learning space management and also need to break through.

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