

The Value, Imbalance Performance and Optimization Path of Ecological Classroom Construction in Local Colleges and Universities under the Background of “Internet+”

Jie Wang*

School of Educational Sciences, Sichuan Minzu College, Kangding 626001, China

*scunjx@126.com

Abstract

As an important part of higher education, the high-quality development of local institutions has become an important indicator for the development of higher education in China, and the quality of classroom teaching is the most important. Based on the perspective of educational ecology, thinking about classroom teaching in local institutions and building ecological classrooms is an inherent need for local institutions to pursue high-quality development, an inevitable requirement for the construction of first-class courses, and a practical need for teachers' growth and students' development, but under the background of “Internet Plus”, the classroom ecosystem faces the phenomenon and problem of the imbalance between teachers' and informatization ecology, students' and informatization ecology, and teachers' and students' ecology. However, under the background of “Internet+”, the classroom ecosystem is facing the phenomenon and problem of imbalance between teachers and information technology ecosystem, students and information technology ecosystem, and teachers and students ecosystem. In order to realize the construction of ecological classroom, local institutions need to improve the information technology teaching ability of teachers, change the passive learning habit of students, build equal and harmonious teacher-student relationship, create a good classroom material environment, optimize and improve the curriculum evaluation system and build a reasonable structure of the curriculum team.

Keywords

Ecologization; Classroom; Quality; Reforms.

1. Introduction

In 2019, the Ministry of Education issued the “Implementation Opinions on the Construction of First-class Undergraduate Courses” (hereinafter referred to as the “Opinions”), proposing the implementation of the “Double Ten Thousand Plan” for undergraduate course construction, aiming to increase the “Golden Course” construction efforts in colleges and universities, so as to improve the quality of talent cultivation. “Since 2020, the outbreak of the new coronavirus epidemic has accelerated changes in college classroom teaching, and colleges and universities across the country have taken online teaching as an opportunity to further promote the quality revolution of classroom teaching and increase the construction of ‘first-class courses’. The construction of “first-class courses” has been stepped up. The Opinions put forward the basic requirements of “first-class courses” of “two genders”, i.e., high order, innovation and challenge, and synchronized the implementation of first-class undergraduate courses with the Double Ten Thousand Plan, and through several years of selection, the “first-class courses” (online first-class courses) have been selected as “first-class courses”. Through two years of selection, the selection indexes of “first-class courses” (online first-class courses, offline first-class courses,

online and offline hybrid first-class courses, virtual simulation experimental teaching first-class courses and social practice first-class courses) have been optimized and perfected, and provinces and cities nationwide have organized and carried out the recognition of “first-class courses” at the provincial level synchronously, which has become a guideline and reference standard for the curriculum construction of colleges and universities. It has become a guiding opinion and reference standard for curriculum construction, but for the universities themselves, what they are pursuing is not to be able to evaluate a few provincial or national “first-class courses” every year, but to optimize classroom teaching, to improve the quality of the school's curriculum construction as a whole, and to enhance the professional growth of the teachers and the sustainable development of the students, while the goal of classroom ecological construction is to improve the quality of the curriculum and the sustainable development of the students. The goal of classroom ecological construction is ecological classroom, the pursuit of high-quality classroom, to achieve the goal of optimizing teaching, so it is particularly important to explore the classroom ecology.

With the development of online education, especially after the outbreak of the new coronavirus epidemic, the new ecology of higher education of “Internet+Education” is gradually formed, the traditional curriculum teaching can not adapt to the needs of the development of higher education in the new era, the main body of the teaching, the environment and other aspects of the imbalance phenomenon is more obvious, especially in the “Internet+” widely used in higher education teaching. Especially after “Internet+” is widely used in college teaching, thinking about higher education in the new era based on the perspective of “educational ecology” has become a rational pursuit of the sustainable development of higher education nowadays. Due to its geographical location, development history, faculty, student structure and other factors, it is unrealistic to realize the short-term “double first-class” and other colleges and universities to overtake, in order to gain a foothold in the new era of increasingly rapid development of higher education, we need to grasp the new ecology of higher education at the macro level, and do a good job of designing the school's own ecosystem at the meso level. In order to gain a foothold in the new era of rapid development of higher education, it is necessary to grasp the new ecology of higher education at the macro level, do a good job of designing the ecosystem of the school itself at the meso level, and make efforts to build an ecological classroom at the micro level, and create a “first-class curriculum” systematically.

2. Connotation and Characteristics of Ecological Classroom

Ecology is a discipline that studies the relationship between organisms and their surroundings. With the continuous development of the discipline of ecology, ecology's research vision has shifted from natural ecosystems to social ecosystems, humanities and social sciences disciplines began to use the principles and methods of ecology to carry out their own field of research and exploration, educational ecology is in the education and ecology disciplines continue to adjoin and intertwine with each other in the formation of a cross-cutting disciplines. It can be said that the emergence of such disciplines is the result of the “edge effect”(Guo,2018). At present, the study of educational ecology has achieved rich research results, and the construction of the discipline has also achieved certain results. Among them, Wu Dingfu(Wu,1990), Fan Guorui(Fan,2000) and others hold the viewpoint of “relationship theory”, believing that educational ecology is a discipline that studies the interaction between education and the surrounding ecological environment, mainly from the perspective of ecological environment, which is an integral part of educational ecosystem, and believing that the task of the discipline is to explore the ecological countermeasures when facing the impact of the ecological environment, while taking into account the impact of education on the ecological environment. It is believed that its task is to explore the ecological countermeasures

of education in the face of the impact of the ecological environment, and at the same time take into account the study of the impact of education on the ecological environment. Ren Kai(Ren,1992), Ma Xinjing(Ma,1996) and Deng Xiaoquan(Deng,2009)and other scholars on behalf of the “system theory” point of view, that the object of study of educational ecology is the education ecosystem composed of education and its surrounding ecological environment, they believe that the various components in the educational ecosystem is mutual influence, interdependent relationship, can not be separated from the consideration of, that is to say, the object of study of educational ecology is to explore the ecological countermeasures of education facing the impact of the ecological environment, while at the same time taking into account the impact of education on the ecological environment. In other words, the research object of educational ecology is the educational ecosystem jointly composed of the educational subject system, educational object system and ecological environment system.

When combing through the literature, we found that the number of research results about educational ecology research in educational ecosystem and school ecosystem has been increasing year by year, and the research on school ecology on the one hand focuses on the macroscopic level, i.e., the necessity and importance of ecological research as well as university governance, etc., and on the other hand focuses on the classroom ecology on the microscopic level, and researches on the nature, characteristics, functions, typical pathologies, and countermeasures and suggestions are carried out. This study will analyze the classroom ecology construction problems of local colleges and universities with the basic principles and laws of educational ecology, construct its intrinsic correlation with the “first-class curriculum”, and actively explore the construction path of “first-class curriculum” in local colleges and universities.

In 1932, the American education scholar Waller first put forward the concept of “classroom ecology” in the book “Sociology of Education”. Ecological classroom is a sustainable classroom, from the point of view of system theory, the classroom is a micro-ecosystem composed of teachers, students and classroom ecological environment. The classroom ecological environment mainly includes the classroom physical environment, the classroom technical environment and the classroom social environment. With the extensive use of “Internet+” in classroom teaching, the blended teaching mode has become the norm in college teaching, and the technological environment of the college classroom has changed along with the change, which affects the classroom physical environment and the social environment at the same time. Nowadays, classroom teaching is faced with many imbalances, and there is an urgent need to build a new balance to improve the quality of classroom teaching.

3. The Value of Building Ecological Classroom in Local Colleges and Universities

This study is based on the actual construction of courses in S College of local ethnic institutions in Sichuan. At present, there are problems such as insufficient number of teachers as a whole, large teaching workload, low ability to apply “Internet+”, low initiative of students, and insufficient support of the informationization environment, which lead to contradictions in teaching and learning in the teaching of the courses and greatly reduce the effectiveness of the classroom and the quality of the course construction. Based on this, it is very important to think about the construction of ecological classroom in local colleges and universities.

3.1. The Intrinsic Need for the High-quality Development of Local Colleges and Universities in the New eraSub-section Headings

In 2021, in the “Outline of the Fourteenth Five-Year Plan for the National Economic and Social Development of the People’s Republic of China and the Vision for 2035”, the thirteenth chapter

of “Enhancing the quality of the nation and promoting the all-round development of human beings” puts forward the planning and objectives of “constructing a high-quality education system”, and explicitly puts forward the idea of “building a high-quality education system”. In the Outline of the Five-Year Plan and Vision 2035, in Part XIII “Enhancing National Quality and Promoting Comprehensive Human Development”, the plan and goal of “building a high-quality education system” is put forward, and “building high-quality undergraduate education, and pushing forward the transformation of some ordinary undergraduate colleges and universities to an application-oriented mode” is explicitly mentioned(State Council,2021). As an important part of higher education, the high-quality development of local colleges and universities has become an important indicator for improving the quality of higher education. The high-quality development of local colleges and universities needs to create a high-quality school culture with the concept of high-quality development, the governance system, moral education and practice, teachers and students, as well as the curriculum and teaching, and so on, and the construction of ecological classroom is one of the intrinsic elements for its high-quality development.

3.2. The Inevitable Need for the Construction of “First-class Curriculum” in Schools

It is clearly stated in the Opinions that “the curriculum is the core element of talent training, and the quality of the curriculum directly determines the quality of talent training.” Local colleges and universities want to achieve their talent cultivation goals, need to further optimize the curriculum system, improve the quality of curriculum construction, eliminating “water courses”, need to be “first-class curriculum” construction, from the change of concepts, the concept of the new up; goal-oriented, the curriculum up; enhance the ability, teachers strong; reform methods, the teacher's strength; the quality of the curriculum, the quality of the curriculum, and the quality of the training courses(Ministry of Education,2019). The reform is based on the corresponding problems in the classroom teaching in colleges and universities, and the ecological imbalance in the teaching of the curriculum from the perspective of educational ecology, to build a new balance in the classroom ecosystem and to realize the goal of a quality classroom. The goal of quality classroom is also an inevitable requirement for the construction of first-class courses.

3.3. The Realistic Needs of Teachers' Growth and Students' Sustainable Development

The classroom is an ecosystem generated by the interaction between teachers and students and the environment in the teaching situation. Li Sen and others believe that the classroom ecology mainly has the function of sustainable development, system standardization, power promotion and nourishing function. Its sustainable development function is mainly manifested in the promotion of the sustainable development of the classroom subject, namely teachers and students, and the promotion of student growth and teacher development is an important function of classroom ecology. Talent cultivation, as the basic function of colleges and universities, needs to promote the growth of students through the construction of classroom ecology, and teachers also need to improve themselves in the construction of classroom ecology to realize their own professional development and life value.

4. The Performance of Classroom Ecological Imbalance in Local Colleges and Universities under the Background of “Internet +”

First of all, it is necessary to recognize the concept of ecological niche, which is used to describe the specific position occupied by a species in the environment, reflecting its position in the ecosystem, in the ecosystem, each species must occupy the appropriate ecological niche, in order to play their ecological functions and reach a harmonious state with the

environment(Guo,2018). With the development of online education, online and offline hybrid classroom has become the norm in college teaching, the application of information technology for classroom teaching has brought positive impacts, but also brought some classroom ecological problems.

4.1. Ecological Imbalance between Teachers and the Informationized Classroom Environment

The balance and stability of the college classroom ecosystem requires the ecological subject teachers and students to play their due role in their own ecological position. However, in the current college classroom, after experiencing computer-assisted teaching, which is moving from the stage of integration of information technology and curriculum to deep integration, combined with the current widespread application of online education and the promotion of online and offline blended teaching mode, teachers generally recognize the significance of information technology to improve the quality of classroom teaching, and generally begin to use information technology in classroom teaching, and even the phenomenon of over-reliance on teachers' The phenomenon of excessive reliance on information technology by teachers even occurs, making it excessively "invasive", resulting in its occupation of the ecological position of teachers, leading to an ecological imbalance between teachers and the information technology environment. A quality classroom requires a balanced classroom ecology. In the information classroom, teachers need to identify their own ecological niche and actively explore it in classroom teaching practice, deciding whether to use information technology, how to use it, when to use it and what kind of technology to use according to the actual situation.

4.2. Ecological Imbalance between Students and the Information Technology Classroom Environment

Deep integration of information technology and curriculum is the trend of teaching reform in colleges and universities. Teachers, in response to this trend of reform, have carried out active exploration, shifting from traditional teaching focusing on teachers' lectures to focusing on students' experiential participation, with forms such as classroom discussions and report sharing becoming more and more prevalent. In order to improve efficiency, the use of information technology means for classroom check-in, selecting people to ask questions, group activities, homework assignment, etc. has become the norm. In order to emphasize the characteristics of "first-class courses" such as "high order" and "challenging degree", the learning tasks are heavier and more difficult than before, which triggers the contradiction between the habit of "inert listening" cultivated by students in the traditional classroom and "active thinking" in the information classroom, which may lead to students' dissatisfaction with the teacher and the informationized classroom. The contradiction between the "inert listening" habits of students in the traditional classroom learning and the "active thinking" in the current information classroom will lead to students' incomprehension of teachers' information classroom teaching, and even resistance, etc. How to change students' thinking and habits of learning while updating teachers' concepts has become a problem that must be thought about in the process of classroom ecological construction.

4.3. Ecological Imbalance between Teachers and Students

Teaching is a bilateral interaction between teachers' teaching and students' learning. Teachers and students are the main subjects and participants of classroom teaching activities. In the college classroom, teachers and students should be in a mutually beneficial symbiotic and equal relationship. Teachers are constantly realizing their own professional development and career growth in the process of helping students learn and grow. In the present-day college informatization classroom teaching, teachers try to use information technology to master students' learning while lacking enough patience to communicate emotionally with all students,

leading to the absurd phenomenon of teachers and cell phones competing for students' attention. If teachers cannot adjust their teaching methods and organization in a timely manner with the changes in students' thinking, habits, and communication styles in the information technology era, classroom teaching is bound to be an inefficient classroom without vitality.

5. The Ecological Classroom Construction and Optimization Path of Local Colleges and Universities under the Background of "Internet +".

The construction of ecological classroom is the inherent requirement for the high-quality development of local institutions and an important indicator of their connotative development. In the context of the application of transformation and high-quality development of local colleges and universities, the quality of course construction and classroom teaching quality should put forward high standards and requirements, based on the "Internet +" background of local institutions classroom ecological imbalance and teaching quality enhancement of the multi-party thinking, targeted to put forward the following strategic recommendations.

5.1. Enhance Teachers' Informationized Teaching Ability

Informatization teaching ability, that is, the ability of teachers to use information technology to effectively help students solve learning difficulties when facing real teaching problems in informatization classrooms, is a comprehensive ability to apply information technology for design, implementation and evaluation(Liu&Yin,2014). Informatization teaching ability emphasizes the integration of information by teachers, focuses on the design of students' learning process scenarios, and should highlight the status of the main body of student learning, and also focuses on the status of the main body of students in the evaluation of informatization teaching, emphasizes the diversity of the evaluation methods, and pays attention to the evaluation of the process of students. These are the realistic trends of classroom teaching and evaluation in colleges and universities nowadays. In order to improve the quality of talent cultivation and promote the overall development of students, it is urgent to improve the informationized teaching ability of teachers. Schools should organize and carry out information technology teaching ability training in a targeted manner, while avoiding the problems of modeling and formalization, and highlighting the effectiveness of training; individual teachers, as one of the main subjects of classroom ecology, should be fully aware of the significance of information technology teaching ability in professional growth, attach great importance to it, and strive to improve the information technology teaching ability by using teaching practice as a platform.

5.2. Transform Students' Passive Learning Mindset

Research shows that some college students have passive learning habits in the classroom, mainly formed in primary and secondary school, as another main body of the classroom ecology, students are not willing to take the initiative to think in the classroom, accustomed to "listening" to the teacher, active speech is a luxury, there is a point of view that "the best way to keep the classroom quiet is to let the teacher speak, and the best way to keep the classroom quiet is to let the teacher speak. There is a view that "the best way to keep the classroom quiet is to ask questions", and this phenomenon is caused by students' "fear" of answering questions. Students would rather play a quiet listener in the classroom, putting themselves outside the classroom, ignoring the fact that they themselves are the main factor of the ecological classroom, and is the most important factor. In the background of "Internet +", classroom teaching on students' initiative, enthusiasm and other high requirements, the classroom is no longer "the teacher finished that the classroom is over", the teacher will be through the study pass APP will learn content, tasks, quizzes, discussions, etc. accurately pushed to each student, and the classroom is also the most

important factor in the classroom. Teachers will accurately push the learning content, tasks, quizzes, discussions, etc. to each student through APPs such as StudyPass, and group cooperation, reports, discussions, etc., are often adopted in the classroom, which put forward high requirements for students' initiative and enthusiasm. After several years of learning and adaptation, students should quickly change their passive learning mindset, establish active and positive learning habits, and build an "Internet+" learning community together with their teachers. Build an equal and harmonious learning community with teachers.

5.3. Build Equal and Harmonious Teacher-student Relationship

As a basic principle of ecology, the "edge effect" refers to the fact that in the intertwined areas of biological communities, due to the specificity, heterogeneity and instability of the habitat conditions in the intertwined areas, it will often increase the species diversity and population density in the region, and also enhance the intensity of the activities and productivity of certain species(Guo,et al.,2018). The edge effect of education ecology is sometimes "positive" and sometimes "negative". With the wide application of "Internet +", the popularization of information technology means, teachers and students in colleges and universities have broken through the traditional classroom time and space constraints, especially the application of smart phones, so that teachers and students are in a 24/7 online state, can be at any time for learning, communication and exchange, and the traditional classroom is similar to the same teacher will pay more attention to the active students, communication and active students. Communication is not active students also do not get the attention of the teacher, and gradually become the classroom of the "marginal students", will produce a "negative effect". Ecological classroom needs equal and harmonious teacher-student relationship, teachers should be equal treatment of each student through information technology means, and even give more attention to the "marginal students" to mobilize their learning enthusiasm, so that they find their own classroom ecological position, so as to obtain growth and development.

5.4. Create a Good Classroom Physical Environment

In addition to the main factor of teachers and students, to build an ecological classroom need to create a good classroom physical environment, a good classroom physical environment is to build an ecological classroom of the inherent basis of the ecological classroom, the ecological classroom needs to be the classroom of the right color, light, temperature and less noise impact, these environments will be formed on the teachers and students to influence, and thus affecting the effect of teaching and learning. Large class teaching is still the norm in local colleges and universities due to insufficient total number of teachers and heavy workload in classroom hours, which will inevitably affect the quality of classroom teaching. Secondly, the smart classroom construction is lagging behind, local colleges and universities classroom construction is still basically a traditional classroom, affected by the funding and space, some schools have a small number of smart classrooms, according to the teaching needs of different courses on the tables and chairs, but due to the smart classrooms are fewer, the classroom teaching workload, most of the courses can not be used in the teaching of smart classrooms, and at the same time, smart classrooms lack of training on the use of equipment, failing to realize the multiple functions of teaching, discussion and research. Teaching, discussion and research and other multiple functions to play its true value.

5.5. Optimize and Improve the Classroom Evaluation System

Scientific and reasonable teaching evaluation system is an important path to achieve teaching quality control, is the necessary link to optimize teaching, the traditional classroom teaching evaluation often presents a single subject, a single content, a single way, etc., in the context of the "Internet +", the traditional teaching evaluation can not adapt to the needs of classroom teaching, to follow the fourth-generation evaluation theory, to build a multi-subject evaluation,

reflecting the student's main body evaluation. Constructing multiple subject evaluation, reflecting students' subjectivity, taking students' self-assessment, mutual assessment and other ways to promote the learning subject to build a learning community. At the same time, combining process evaluation and summative evaluation, the network learning platform provides convenience for process evaluation, and teachers don't have to worry about the problem of increasing the workload of multiple evaluation. In terms of evaluation content, in addition to assessing students' mastery of knowledge, students should also be assessed on their practice, innovation, cooperation, writing, language and other competencies required by the teacher education competency standards, so as to realize the developmental function of evaluation.

5.6. Building a Rationally Structured Curriculum Team

The goal of classroom ecological construction is a high-quality classroom, but also an ecological classroom, a sustainable classroom, which will not be affected by the adjustment and change of teachers' jobs. The total number of teachers in local colleges and universities is insufficient, and the positions of teachers will be changed due to grade promotion and other reasons, so the original course teachers become "marginal teachers", which leads to the adjustment of the teaching tasks of the courses they undertake to other teachers, which means "starting all over again" in terms of the curriculum. This phenomenon is not conducive to the construction of ecological classroom and the improvement of course quality. Frequent changes of teachers keep the courses under reconstruction and lack of iterative accumulation of information and value shaping. Based on this problem, local institutions should introduce a system that guarantees the stability and continuity of course leaders, encourages the construction of classroom teams with a reasonable structure in terms of academic qualifications, support, and disciplinary specialties, and realizes the sustainable development of course construction.

6. Conclusion

Under the background of "Internet+", the construction of ecological classroom, thinking from the two levels of teachers' growth and students' development, focusing on the classroom as the main factor of an independent ecosystem, constructing a new type of teacher-student relationship under the background of "Internet+", transforming teaching concepts, improving information literacy, and improving teachers' information technology teaching ability. It puts forward higher requirements for teachers' informatization teaching ability, and at the same time requires teachers to strengthen their knowledge of online education theory, communication theory, curriculum teaching theory, etc., to constantly reflect on their teaching practice, innovate their teaching methods, improve the quality of classroom teaching, and support the realization of the cultivation goals in a high-quality way.

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