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A Survey of Student Satisfaction in Blended Teaching Based on "Rain Classroom"

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Abstract: *In line with the progress and development of the times, educational informatization has become an inevitable trend in the development of education in the new era. Information technology has an immeasurable impact on China's current education development. Tsinghua University has launched an online teaching tool called "Rain Classroom", which has turned mobile phones into a learning tool for students, giving new experiences to the three stages before, during, and after class. The author conducted a questionnaire survey on the learning satisfaction evaluation of 155 students in the School of Physical Education of Sichuan Normal University from 2018 to 2021 who had used the "Rain Classroom" smart teaching platform for social sports. It was found that the overall satisfaction of students in social sports towards Rain Classroom is relatively satisfactory. As a new teaching model, blended learning based on rain classroom support has many innovations, but it also has some problems. The author analyzed the teaching advantages of the Rain Classroom smart platform and various factors that affect students' learning satisfaction through the literature collected in the early stage and the survey results in the later stage. Based on the influencing factors, the author proposed suggestions to enhance students' satisfaction from different aspects, maximizing the advantages of the Rain Classroom smart platform in the teaching process, improving the construction of the "Rain Classroom" smart platform, and improving the teaching quality of online courses in schools, to contribute to the development of educational informatization in China.*

Keywords: *offline teaching, online teaching, rain classroom, blended learning*

1. Introduction

The quality of higher education is the lifeblood of higher education, affecting the overall quality of universities nationwide. In recent years, with the continuous development of higher education in China and the continuous expansion of enrollment in higher education institutions, the overall quality of ordinary higher education institutions has become an inevitable problem[1]. The quality of education in universities should not only ensure a solid foundation of knowledge, a complete knowledge structure, the ability to apply theoretical knowledge to practice, but also enable it to achieve comprehensive development. Therefore, seeking changes in the teaching methods of universities and improving the teaching level of undergraduate programs has become a top priority for all universities. In higher education, students are the main service objectives of higher education, and their satisfaction directly reflects the quality of university education[2]. By conducting research and research on the "blended" teaching carried out by universities under the support of "cloud classrooms", it is helpful for universities to further improve their educational level and build a good campus environment. With the support of Rain Classroom, adopting a blended teaching model can enable schools to provide services to all members while transforming the identities of teachers and students, and strengthen students' subjectivity[3].

2. Research Objectives

The main research objective of this article is to analyze the various factors that affect students' learning satisfaction through the rain classroom smart platform, based on the literature collected in the early stage and the survey results in the later stage. Based on these factors, suggestions are proposed from different aspects to enhance student satisfaction, providing feasible reference suggestions for future teachers or students who use rain classrooms, and leveraging the advantages of the smart platform rain classroom in the teaching process, Improve the teaching quality of online courses in schools.

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3. Research Intention

3.1. Theoretical Significance

By investigating the satisfaction of students with the hybrid teaching mode supported by the rain classroom, this study explores how teachers can use the "rain classroom" to achieve the best teaching results in hybrid teaching, how students can better integrate into the "rain classroom" for learning, and proposes improvement plans to strengthen students' subjectivity in the classroom and enhance their learning enthusiasm in the rain classroom, It enhances students' participation in online classrooms, thereby effectively promoting the effectiveness of teaching through the organic integration of teachers and students[4].

3.2. Practical Significance

The current research on rain classroom teaching mainly focuses on the design of rain classroom teaching, the construction of rain classroom teaching mode, the practice and application of rain classroom teaching, and the mixed teaching mode of rain classroom. This article mainly investigates the satisfaction level of blended teaching mode supported by "Rain Classroom", understands various factors that affect students' satisfaction with learning supported by Rain Classroom, analyzes the reasons for their occurrence, and provides corresponding improvement suggestions[5]. Utilize the advantages of the smart platform Rain Classroom in the teaching process, improve the construction of the smart platform "Rain Classroom", improve the teaching quality of online courses in schools, and provide a contribution to the development of education informatization in China.

3.3. Overview of Domestic Research

Through the theme of "Mixed Teaching in Rain Classroom", a total of 1288 relevant articles were searched on CNKI from 2016 to April 2022, including 1222 domestic journals, 0 doctoral theses, 57 master's theses, and a total of 9 other relevant articles on "Mixed Teaching in Rain Classroom"[6]. The research on mixed teaching in rain classrooms in China mainly focuses on the design of mixed teaching courses in rain classrooms, the application research of courses, the practice and exploration of mixed teaching models, and the construction of mixed teaching models, such as "Exploration and Practice of Mixed Teaching Models in Higher Vocational Sports Rain Classrooms in the Post MOOC Era" and "Application of Mixed Teaching Based on Rain Classrooms in Biochemistry Teaching for International Students" Construction of a Mixed Teaching Model for College English Based on Rain Classroom[7].

During the six years since the birth of Rain Classroom, a total of 19 articles have been published in China on "blended teaching and student satisfaction". The research direction of the literature mainly focuses on analyzing the impact of blended teaching on student satisfaction, and exploring the practice and exploration of blended teaching from the perspective of student satisfaction[8].

During the six years since the birth of Rain Classroom, a total of 23 articles on "Rain Classroom&Blended Teaching&Satisfaction" have been published in China. Out of these 23 articles, only two master's theses have been published, and the remaining 21 are all journals. Only three of the topics included keywords, two journals, and one paper, namely "Research on the Factors Influencing Blended Vocal Teaching in Private Universities from the Perspective of Student Satisfaction", "Research on the Satisfaction of Blended College English Teaching Based on Rain Classroom", and "Research on the Satisfaction and Influencing Factors of Blended Learning Learners Supported by Rain Classroom", Most other literature titles only have one keyword or keyword appearing in the abstract[9].

In summary, it can be concluded that:

(1) From 2016 to April 2022, the number of research literature on the hybrid teaching model of rain classroom was in an increasing stage. This phenomenon indicates that with the development of educational informatization, online education has become a major trend in future education, and more and more scholars in China are continuously increasing their attention to online education[10].

(2) There are many articles related to blended learning in China, covering a wide range of research fields and rich research content.

(3) However, based on the above data analysis, it can be concluded that there is a lack of articles on student-centered research on learning satisfaction under the support of rain classrooms.

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4. Analysis and Discussion of Research Results

4.1. Factors in the Teacher Dimension

Table 1: Teachers with Good Teaching Ability Improved My Learning

Option	Number	Ratio
Very disagree	2	1.29 %
Disagree	1	0.65 %
neutral	6	3.87 %
agree	29	18.71 %
Strongly agree	117	75.48 %

From the analysis in Table 1, it can be concluded that when teachers use rain classrooms for teaching, classroom teaching ability is very important for students. Students' recognition that teachers with good classroom teaching abilities can improve their learning is as high as 94.19%, and only 1.29% of students believe that teachers with good classroom organization abilities cannot improve their learning. From this, it can be concluded that teachers' teaching abilities have a significant impact on students' learning satisfaction under the support of rain classroom in blended teaching.

Table 2: Teacher's Teaching Style Makes Me More Willing to Participate in the Classroom

Option	Number	Ratio
Very disagree	1	0.65 %
Disagree	5	3.23 %
neutral	9	5.81 %
agree	20	12.9 %
Strongly agree	120	77.42 %

From the data in Table 2, it can be concluded that 90.32% of students believe that the teacher's teaching style will make them more willing to participate in the mixed teaching process supported by the rain classroom. There are many teaching styles for teachers, and the author believes that the teaching characteristics of teachers are closely related to their own personality. A gentle and kind teacher can be a natural type, a witty and introverted teacher can have a calm teaching style, and a warm and cheerful teacher can have a quiet teaching style. Teachers with different personalities will have different teaching styles.

Table 3: Teacher's Teaching Attitude Affects My Learning Satisfaction with Using Rain Classroom

Option	Number	Ratio
Very disagree	1	0.65 %
Disagree	1	0.65 %
neutral	13	8.39 %
agree	22	14.19 %
Strongly agree	118	76.13 %

After analyzing the data from the questionnaire survey results in Table 3, it can be concluded that 76.13% of highly recognized students, 14.19% recognized students, 8.39% neutral students, 0.65% disapproved students, and 0.65% highly disapproved students. The overall recognition rate is 90.32%, with only 1.29% of students not recognizing and 8.39% maintaining a neutral attitude. Therefore, it can be concluded that the student satisfaction of blended teaching supported by rain classrooms is largely influenced by the teacher's teaching attitude.

4.2. Factors in the Curriculum Dimension

Based on the analysis in Table 4, it can be concluded that the combination of course content and rain classroom has promoted my learning. The percentage of students' recognition is: 74.19% highly recognized, 14.19% recognized, 8.39% neutral, 1.94% not recognized, and 1.29% very not recognized. The overall recognition rate is 88.39%, with only 3.22% of students not recognizing and 8.39% maintaining a neutral attitude.

Through the analysis of Table 5, it can be concluded that the percentage of students' recognition of "Rain Classroom Adjusting Curriculum Flexibility and Promoting My Learning" is: 75.48% highly recognized, 14.19% recognized, 7.1% neutral, 1.94% not recognized, and 1.29% very not recognized. The overall recognition rate is 89.68%, with only 3.22% of students not recognizing and 7.1%

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maintaining a neutral attitude. From the above analysis, it can be concluded that in the process of teachers using rain classrooms for blended teaching, students have a high degree of satisfaction with the enhancement of flexible systems supported by rain classrooms.

Table 4: The Combination of Course Content and Rain Classroom Functions Promotes Learning

Option	Number	Ratio
Very disagree	2	1.29 %
Disagree	3	1.94 %
neutral	13	8.39 %
agree	22	14.19 %
Strongly agree	115	74.19 %

Table 5: Rain Classroom Adjusts Curriculum Flexibility and Promotes Learning

Option	Number	Number
Very disagree	2	1.94 %
Disagree	3	1.29 %
neutral	11	3.87 %
agree	22	17.42 %
Strongly agree	117	74.48 %

Table 6: Teaching Design of the Course Improves Satisfaction with Using Rain Classroom Learning

Option	Number	Number
Very disagree	3	1.94 %
Disagree	2	1.29 %
neutral	6	3.87 %
agree	27	17.42 %
Strongly agree	117	75.48 %

Through the analysis in Table 6, it can be concluded that the percentage of students' recognition of "the teaching design of the course has improved my satisfaction with using the rain classroom for learning" is: 75.48% highly recognized, 17.42% recognized, 3.87% neutral, 1.29% not recognized, and 1.94% very not recognized. The course teaching design has improved the percentage of students' satisfaction with using rain classrooms by up to 92.9%, indicating that the course teaching design has a significant impact on students' learning satisfaction.

4.3. Students' own Factors

According to Table 7 above - "My interest in learning the course has promoted my use of rain classrooms for learning", it can be concluded that the percentage of students' recognition is: highly recognized 69.68%, recognized 18.06%, neutral 8.39%, not recognized 2.58%, and very not recognized 1.29%. The above data indicates that students' interest is crucial in using rain classroom learning, and learning interest is one of the important factors that affect satisfaction. Interest is the internal mechanism that inspires and promotes students' learning, and it is the internal driving force that motivates students to actively think and explore knowledge. With interest as the driving force, teachers are more likely to bring students into a "happy" and "relaxed" learning environment. If students do not have interest as the driving force, they will feel burdened with learning, and even develop a serious aversion to learning. Therefore, for teachers, the key to improving teaching quality is to cultivate interest in learning.

Table 7: Student interest in Learning Promotes Satisfaction with Using Rain Classroom Learning

Option	Number	Number
Very disagree	2	1.29 %
Disagree	4	2.58 %
neutral	13	8.39 %
agree	28	18.06 %
Strongly agree	108	69.68 %

From Table 8, it can be concluded that 85.81% of students acknowledge that learning motivation promotes their satisfaction with using rain classroom learning. Learning motivation is very important for students and is one of the factors that affect their satisfaction. For students with clear learning motivation, the addition of rain classes can make learning easier.

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Table 8: Students' Learning Motivation Promotes Satisfaction with Using Rain Classroom Learning

Option	Number	Number
Very disagree	1	0.65 %
Disagree	7	4.52 %
neutral	14	9.03 %
agree	25	16.13 %
Strongly agree	108	68.68 %

5. Suggestions

Based on the factors that affect student satisfaction under rain classroom support mentioned above, the author proposes the following suggestions from four aspects.

5.1. For teachers

(1) The school regularly conducts teacher teaching ability training.

(2) Teachers should combine the functions of the rain classroom with their own teaching.

(3) Teachers should have a correct understanding of themselves and develop a teaching style that suits them.

(4) Maintain an optimistic and positive teaching attitude.

5.2. Curriculum aspects

(1) The school conducts moderate screening of learning courses supported by Rain Classroom.

(2) Transform the roles of teachers and students.

(3) Add new instructional design to the course.

(4) Optimize the traditional assessment system.

5.3. On the student side

(1) Cultivate students' interest in active learning.

(2) Establish students' good concepts.

(3) Teachers assist students in developing learning plans.

5.4. In terms of rain classroom

(1) Improve the construction of network facilities in the school.

(2) Provide a high-quality network environment.

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