

Construction on Postgraduate Education Interactive Turnover Micro-course System based on Internet +

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Abstract: The Internet + era of a single teaching method is not enough to support education. The Internet + and interactive inversion of micro-teaching cross-integration to build a comprehensive and diversified teaching system, based on 360° performance method, fuzzy comprehensive evaluation method, and OBE theory, this paper explores the teaching evaluation system of Southwest Forestry University postgraduate education from two dimensions of teachers and students.

1. Introduction

The Internet + is a new form of business and a new form of economic and social development under the innovation of the knowledge society and is the result of the practice of Internet development thinking, this new paradigm has had a significant impact on the structure, approach, and content of the education system, bringing unprecedented opportunities and challenges. The Internet + education model integrates high-quality educational resources by means of big data, internet, and cloud platform, and improves and promotes teaching methods, contents, and effects, to promote the reform and innovation of education, teaching, and management model, education content extensive information, high-quality, fast, at the same time, Internet + education there are many problems, it is urgent to re-frame the education and teaching management model from a new perspective. Mobile phones, computers, and other mobile devices have become the main tools of fragmented time learning, to facilitate effective completion of school and enhance the rate of knowledge absorption. Micro-lesson is a flexible education model, which can make use of scattered time to carry out fragmented learning, increase the times of knowledge internalization and improve the quality and effect of teaching. The model of Internet + education has been widely used in education, but there are some shortcomings in both common teaching and network teaching, such as single teaching method, poor enthusiasm, no obvious effect, no face-to-face teaching, etc. . With the background of Internet +, this paper analyzes the current situation of Southwest Forestry University postgraduate education and teaching management, and finds out the existing problems and management difficulties, it is proposed to construct a new interactive microlesson system of Internet + education with interactive teaching system, flipped classroom and microlesson, so as to increase the interactivity of teaching and learning, and extend the effective study time, to improve the learning efficiency and initiative of students, enrich the teaching methods and contents of postgraduate education, realize the transformation and upgrading of postgraduate education and teaching management, form a harmonious teaching ecology, improve the teaching environment and promote the development of postgraduate education, deepening teaching management, alleviating work-study contradiction, adapting to the sustainable and stable development of postgraduate education in the new era. The new system can adapt to the development of postgraduate education, improve educational approaches, promote the deep integration of postgraduate education and modern information technology, upgrade the modernization and Scientization of teaching management, and promote the reform of teaching models and the construction of informatization, to provide ideas, experiences and theoretical guidance for the reform of teaching and management of postgraduate education in China.

2. Problems in the Internet education system for postgraduate students

In order to complete the research tasks assigned by the tutor, the postgraduate students need to travel or work frequently instead of studying in the classroom, in which case they need to have an internet class. At present, the main problems of postgraduate education in this situation are as follows:

(1) The simple internet teaching makes it impossible for teachers and students to communicate with each other, for students to judge the degree of understanding and doubtful points of Students lessons and mastery of knowledge, for students to keep up with the pace of teachers, and for long-term online education to make teachers and students lose their eyesight, easy to fatigue, low concentration, the authenticity of online after-school homework needs to be examined, and it is impossible to monitor whether students are listening to the lectures.

(2) There are obvious regional differences, the imbalance of educational funds still exists, which affects the sustainable development of the Internet + education model, the scale of construction and the extension, and the poor technical support ability, which affects the choice of educational models.

(3) The virtual nature of the Internet makes the teachers and students have low enthusiasm, and the negative attitude of coping and escaping is obvious.

(4) The content of the training and the method of examination are divorced from the actual teaching demand, the pure network teaching is not mature enough, the ordinary offline course examination is too rigid, the teaching system of postgraduate education needs to be perfected and innovated urgently.

3. Flip Teaching

The role of passive listening and learning is different from that of normal classroom, in which students play an active role as the main body, provide the key points of study in advance, and complete the relevant homework, let students organize and make lesson plans, audio text, PPT report and so on in their spare time. Let students take the lead role in explaining the learning content. This way explains the principle of knowledge, the process of practice and the depth of the content from the students' point of view, deepens the students' understanding of the points of learning knowledge, and promotes the students' learning enthusiasm, so we can fill in the gaps.

4. Teaching evaluation system

The teacher dimension of fuzzy comprehensive evaluation, based on the Southwest Forestry University, based on 360° performance-based fuzzy comprehensive evaluation method, four aspects of teaching attitude, teaching method, teaching content and teaching effect are scored and the comprehensive scores are calculated according to the weight, and the above-mentioned four aspects are determined as the objective subject of evaluation, the evaluation index system of this mathematics teacher is $Z = \sum_{i=1}^4 A_i$, where A_1 = teaching attitude, A_2 = teaching content, A_3 = teaching method, A_4 = teaching effect. See Table 1 for further details. The second level teaching index: $Z = \sum_{i=1}^4 A_i = \sum_{j=1}^5 A_{1j} + \sum_{j=1}^6 A_{2j} + \sum_{j=1}^3 A_{3j} + \sum_{j=1}^4 A_{4j}$, The indicators are shown in Table 1. Theoretical teachers teaching quality assessment scoring standards of five grades of scoring standards: very satisfied with the score of 90, satisfied with the score of 80, the general score of 70, dissatisfied with 60, very dissatisfied with the score of 50. The score sheet of teaching quality assessment are shown Table 1.

Table1 The examination table of the teaching quality of the teacher by the examination subject

The teacher being evaluated:			Course name:			Class:		Date:	
Primary Index	weight	Secondary Index	weight	Score	Primary Index	Weight	Secondary Index	weight	Score
Teaching attitude	0.275	Teacher attendance record	0.086		Teaching contents	0.333	After class summary		
A_1		A_{11}			A_2		A_{21}	0.048	

Teaching effect A ₄	0.227	Comply with teacher basic etiquette (dress, speech) A ₁₂	0.046	Teaching methods A ₃	0.165	Concise language, moderate speed, Standard Mandarin A ₂₂	0.058
		The lesson plan complete A ₁₃	0.062			The teaching contents are well-distributed A ₂₃	0.056
		The level of commitment students A ₁₄	0.053			Classroom integrity, clear teaching objectives A ₂₄	0.038
		Good work ethic A ₁₅	0.028			The speech well written and the script clear A ₂₅	0.065
		Achievement rate A ₄₁	0.051			Clear and logical A ₂₆	0.068
		Student hands-on ability in experimental operation A ₄₂	0.068			Teaching and learning go hand in hand A ₃₁	0.080
		Classroom activity A ₄₃	0.049			Diversity of teaching methods A ₃₂	0.037
		Guide the students ability of independent innovation A ₄₄	0.059			Degree of integration of theory with practice A ₃₃	0.048

Those taking part in the assessment are shown in Table 2. The number of students attending the class [attendance/10] rounding off is rounded off. The total frequency is 100, and Fuzzy Comprehensive Evaluation and 360° assessment are carried out:

Final grade = self evaluation × 10% + expert evaluation × 20% + peer review 25% + leader listening 15% + student evaluation × 30% .

Table 2 Frequency Table of teacher assessment

self	specialist	Colleagues	Leader	Student
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Number persons	1	2	2	1	x
weight	0.1	0.2	0.25	0.15	0.3

(1)The student dimension of OBE

OBE(Outcome-based education) is a student-based learning-oriented education philosophy. The concept of result-oriented teaching covers four elements: Defining, Realizing, Assessing, and Using learning outputs. To define the learning output, we need to define the teaching objectives of the course, that is, the knowledge objectives, the ability objectives, and the quality objectives realizing learning output teachers design teaching according to teaching content and choose appropriate teaching methods to carry out the course teaching. Evaluating learning output requires teachers to evaluate student-centered and process-oriented learning, using learning outcomes requires students to put their knowledge and skills into practice, and the actual demand for professionals at full employment^[2].

(2)The teaching concept of OBE

The teachers take the final learning outcome as the starting point in the teaching of postgraduate education, and design courses and carry out teaching in reverse, the reform of course evaluation method is carried out around the mainline of Defining learning output-realizing learning output-evaluating learning output. Definition of learning output: to examine the degree of completion of learning tasks and mastery of knowledge points (Class B). Realizing learning output: to examine the students' practical operating ability under the teacher's instructional design, experiment, and understanding of the principles of equipment technology and proficiency level (Class C). Assessment of learning output: Examination of the student's hands-on, practical design, experiments, and the completion of learning tasks process performance level (Class D). Using learning outcomes: to examine the excellence of students in the process of practice (category E). Meeting the needs of the Society for lifelong learning in postgraduate education courses under the concept of OBE, it is necessary to set up a system of diversified assessment methods, which includes comprehensive assessment contents, diversified assessment forms, and whole assessment process. The multiple assessment systems includes classroom testing, homework, class status, class discussion, and question answering, group study status, attendance, class preview, class practice, extra-curricular training, practice status, group discussion, and question answering, group study status, attendance rate, the pre-class study, class state, the after-class study will be fully included in the scope of assessment, according to the knowledge, ability, quality Trinity curriculum teaching content system to design diversified assessment forms.

Different from the usual final examination (70% paper grade + 30% ordinary grade), the course total grade extracted by OBE theory = Ordinary Grade 1(60%) + Final grade (40%), among which ordinary grade 1(60%) = B + C + D + E. B = classroom test B₁(5%) + B₂ homework (10%). C = Classroom State C₁(5%) + class discussion and question answering C₂(5%) + Group study state C₃(10%) + attendance, class preview C₄(5%). D = Classroom Practice D₁(10%) + extracurricular practice D₂(10%)^[3]. The indicators and weights of the learning assessment are shown in table 3.

Table 3 Multiple assessment of course learning achievement

Student:	Course:	Class:	date:				
Primary Index	Weight	Secondary Index	Weight	Score	Secondary Index	Weight	Score
Average grade 1	0.6	Classroom testingB ₁	0.05		Group learningC ₃	0.10	
		After-school workB ₂	0.10		Attendance, class previewC ₄	0.05	
		Classroom stateC ₁	0.05		Classroom practiceD ₁	0.10	
		Class discussion and questions	0.05		After-school trainingD ₂	0.10	

		and answersC ₂
Final grade	0.4	

Practice Grade = Average Grade 2(60%) + Final grade (40%). Average Grade 2(60%) = practice state E₁(25%) + Group discussion and question answering E₂(25%) + Group study state E₃(25%) + Attendance rate E₄(25%). The evaluation indicators and weights of the results of the internship are shown in table 4.

Table 4 Diversified Assessment of internship achievements

Student:		Practical Course:		Class:		Date:	
Primary Index	Weight	Secondary Index	Weight	Score	Secondary Index	Weight	Score
Average grade 2	0.6	Internship statusE ₁	0.15		Group study statusE ₂	0.15	
		Panel discussion and questions and answersE ₃	0.15		Attendance rateE ₄	0.15	
Final grade	0.4						

5. Conclusion

The characteristics of Internet +, such as cross-border integration, innovation-driven, remolding structure, open system and so on, are integrated into the interactive micro-course, and the integrated and diversified system is used to rejuvenate traditional postgraduate education, this teaching method makes the teaching system comprehensive and diversified from the organizational structure to the perfection of the basic content. From the two dimensions of teachers and students respectively, the new interactive inversion microlesson system of 360° performance fuzzy comprehensive evaluation and OBE theory evaluation is used, it provides experience and thinking for Internet + postgraduate education with multi-dimension and multi-method.

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