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Research on OEC Students' Learning Interests through Data Collected From Online Learning Platform

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Abstract. The aim of this study is to stimulate students' situational interest in order to help them become subjects with completely independent individual interests. Based on this aim and the resources on the international teaching platform, SAKAI, we construct the small private online pharmacology course and collect the online data related to overseas students' learning behavior. We find that emphasizing the value and repeatedly stimulate students' situational interests can help them become subjects with completely independent individual interests. Studies of 'interests' have shown that the most important influencing factors are individual interests, subject interests, and situational interests, are learning materials and background knowledge. In conclusion, the reform of teaching methods should be student-centered and learning process-guiding can help them with their construction of learning initiatives.

Introduction

Teachers, as guides of students in their learning, sometimes use improper methods, unfortunately acting as the 'killers' of students' learning interests. Liang Qichao, a celebrity in late Qing dynasty, was good at education. The nine children of his were leaders in various fields, three of which were academicians in their era. In his essay, he mentioned that, "mortals should often live in fun", emphasizing the importance of cultivating interests during the upbringing of elites. Recalling the study of interest in the West in recent years, we found that learning interest to a certain extent, can be cultivated. Contrary to cultivating interest, teacher-stereotyped classroom lectures and presentations will put students in a passive learning position. Students will lack learning initiatives, and have poor learning outcomes. Moreover, the teacher's organization of the classroom has nothing to do with the teaching of the subject. The seemingly colorful classroom activities do not necessarily cultivate interest in learning. In contrast, they may even constrain the role of interest in learning. Valuing the inherent law of education and achieving the purpose of education, are the important areas for educators to consider in teaching designs. How to develop theories based on Chinese and Western interests, change the classroom environment into an interesting one, organize and guide more effective teaching activities that conform to the law of interest development, and promote the learning initiative of the students, are the necessary issues to be considered by every university teacher, and in any course. Educating international students is the forefront of internationalization of education. Medical students' education is a challenge to teachers' teaching ability and methods, because of the teachers' cultural impact and strong professional characteristics. It also shows the teaching reform and educational internationalization of students as a core and unprecedented opportunity.

Methods for cultivating learning interest.

To a certain extent, students' interest in learning is influenced by external environmental factors, but also includes "congenital" elements. Studies have shown that interest arises from the interaction of people with the environment, i.e. the result of the interaction of people with specific contextual content [1,2]. Interest also has certain heredity. It is closely related to the areas of the brain where characterization of searching and avoidance behaviors are located, and it is also associated with congenital inheritance. For example, newborns show a wide range of interests in the surrounding social and physical environment [3].

A retrospective analysis of the study of interest in Western learning in the past two decades has found that the factors that affect students' interest in learning are divided into three categories: factors that affect individual interest, factors that affect the situation, and factors that affect the subject interest. For instance, individual interest is influenced by individual knowledge reserves and value reserves [2], and personality traits such as tenacity and conscientiousness. Gender also affects the rate of decline of an individual's interest in a subject. Cooperation between men and women can improve the interest of study partners. Positive factors that influence situational interest include the provision of background knowledge, provision of meaningful choices, the quality of reading materials, provision of subject and domain knowledge, provision of reward for fulfilling expected tasks, the usefulness and relevance of knowledge, reading materials in the form of narration or questions, and so on. The factors influencing subjective interest include the student’s appropriate subject knowledge reserve (i.e. too much or too little knowledge reserves will reduce the interest in learning) and the domain knowledge reserves. Emotional factors in reading play a positive role in subjective interest.

Many of the studies that affect interest in learning focus on a single perspective, but the factors that affect the various types of interest are always intertwined. And, whether or not to study interest depends not only on a single factor, but also on the interaction among the three factors [4]. An effective way to stimulate interest in learning is to find interest in situations that stimulate students' individual characteristics, family backgrounds, previous interests, and knowledge. In the process of maintaining situational interest, promote the spontaneous manifestation of interest through activities or the development of a particular topic or subject of interest. And in more similar learning activities, repeated stimulation eventually turns into an individual interest. [5] The key point of many studies on the influence of learning interest is how to change students' learning interest from situational interest to individual interest.

The theory of Dynamic change of Psychological construction holds that: situational interest only in the constant repetition of the experience can stimulate the development of individual interest. The theory of the interaction between people and goal suggests that, emotions (positive emotions and emotions that are learned in the task) are highly correlated with the value (the degree to which students are given importance to learning activities), and affect interest [6,7]. The domain-learning model suggests that the change in situational interest to individual interests is accompanied by changes in knowledge and learning strategies. Therefore, it is necessary to effectively predict the developmental stage of students ' interest, and to monitor the progress of knowledge accumulation and learning strategies, in order to improve the students' learning history. The rate at which students’ interests change from situational interest to individual interest, improves. [8]

Based on the above theory, a reasonable interest-training course should be planned as a practical way to guide students to develop individual learning interests. Teachers play an indispensable role in achieving this goal. They must be good at communication, love students, be interested in and have much knowledge of what they teach, and have positive emotions that can help students experience what they learn. In the course of teaching, the teachers should give students the opportunity to choose, and be creative, etc. They should also help students learn the knowledge of self-efficacy. Ultimately, it will be realized that students’ situational interest will gradually change into individual interest, thereby reducing procrastination and other learning problems. [9]

Integration of factors that influence interest, building learning platform, guiding the learning process

Each student's individual interest-related factors, such as individual knowledge reserves and value reserves, as well as individual character traits such as tenacity and conscientiousness, have been characteristic before one's enrollment. Based on the factors that influence situational interest, we combine various interest-guiding factors in the teaching activities, construct the teaching platform, guide the learning process, and eventually cultivate individual interest (Table 1).

Table.1 Construction of learning platform and learning process guide and the cultivation of interest-related principles

Teaching activities		Interest - related factors
1. Build SPOC learning platform		
	1.1 Course information	Provide background knowledge such as drug development history or disease treatment history [2]
		Improve the quality of reading materials[10]
		Provide topics and domain knowledge [11]
		Focus on the usefulness and relevance of knowledge [12]
		Provide narrative- or problem-form reading materials[13]
		Provide a meaningful choice [14]
	1.2 Course notification, quiz, assignment	Provide a reward for accomplishing the expected task[15]
		Pay attention to cultivating students' self – efficacy[16]
		Pay attention to repeated stimulation, and constantly strengthen the principle [16]
	Forum, chat room, survey feedback	From shallow to deep, from outside to inside the teaching strategy [16]
2. Guide the learning process		
	2.1 The teacher prepares himself	Communication skills, love students, love teaching, rich in knowledge [17]
		The importance of learning activities [18]
	2.2 Course organization	Guide positive emotions[18]
		From shallow to deep, from outside to inside of the teaching strategy [16]
		Focus on cooperation between male and female groups [19]
		Pay attention to cultivating students' self - efficacy [16]

Note that SPOC is a short private online course, literally "small-scale restrictive online course", relative to MOOC (massive open online course) in the massive and open. 'Small' refers to the small size of students. 'Private' means that students can meet the requirements to be included in the course of study. SPOC is a mixed learning model that combines classroom teaching and online teaching for College students. It is a very efficient way for the communication and transmission of information. [20,21] SPOC online teaching platform used by our school SAKAI is an open source free course management project sponsored by Stanford University, MIT and Berkeley in 2004, which is characterized by reliability, cooperation and scalability. Teachers and students interact online through

the platform for daily teaching-related contents. The system provides features including notification, courses, assignments, quizzes, chat rooms, forums, team management, and statistical analysis that include more than 30 kinds of tools provided by dozens of domestic and foreign famous schools for all ages.

Analysis of the Effect of Medical Students' Interest

From January 2015 onwards, we randomly divided a particular batch of students into two groups in each semester. One group had online and offline flip classroom guidance sessions and the other group carried out the offline traditional teaching control classes. After five semesters, data from the two groups were analytically compared, using SAKAI statistical analysis tools. We found that the students, through the control and guidance of the online and offline learning process, not only increased their passive online time, but also their active online time was significantly increased. Some students even formed an online review, repeated practice of good habits, undertook learning initiatives, and students' achievement significantly improved. At the same time, the results of the survey revealed that the number of international students' procrastination and excuses were significantly decreased. From this point of view, it was confirmed that poor students' learning difficulties had been partially resolved.

Table.2 Summary of Questionnaire Results of Procrastination-related Performance of 2016-2017 Autumn Medical Students

Procrastination	classification of performance	Times*number of people in Control class	Times*number of people in experimental class	T-test *p*
Do not want to do things related to study	Avoidance	6	3	
Claim to have a task more important than learning	Denial	5	3	
Intensive video games or internet access	Distraction	7	4	
Compare one's learning situation with a worse person	Counterfactual	3	1	$p = 0.001$
Emphasize the sense of satisfaction outside of learning	Balance	2	1	
Attribute procrastination to external factors	Blaming	10	4	
Ridicule active learners	Mocking	2	0	
Total number		35	16	

From the above results we found that, firstly, interest-oriented SPOC promotes the teaching reform and improves students' achievement. Secondly, SPOC innovative teaching model enables teachers to return to the campus to become genuine leaders of the classroom. Teachers are learners and integrators of curriculum resources. In the classroom, teachers are the organizers of the whole class. They organize student discussions, provide students with guidance, and work together with them to solve any problems encountered. SPOC inspires the teachers' enthusiasm and classroom vitality. Thirdly, SPOC places greater emphasis on giving students a complete and in-depth learning experience. It also stimulates students' initiative and creative potential, and motivates their participation, especially for students with insufficient leaning motivation.

Information resources from the wide network, superior multimedia features, and multi-directional interactive functions make it possible to improve the teaching quality and efficiency. With teachers as the organizers of the curriculum, the tasks and challenges are the comprehensive utilization of various

teaching methods, providing students with the opportunities in making choices and undertaking tasks in class, encouraging students to establish the knowledge of self-efficacy, transforming students' interest to individual Interest, and ultimately helping students become the subjects, controllers, motivators, and moderators of their interests. In summary, we use the research and practice of learning interest as a means to guide online and offline learning, and hence cultivate foreign medical students' learning initiatives and interests, in order to provide a reference for their education.

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