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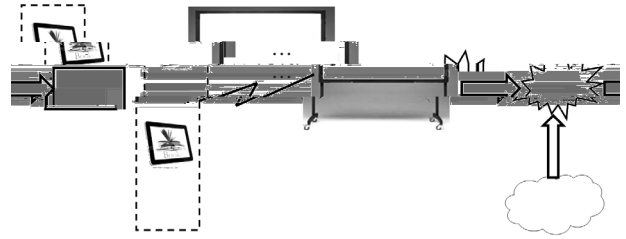
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Hot Topics Characterization of Research on Overseas STEM Education and Approach Judgments Based on ERIC (2005-2015)

Zhan Qinglong, Xu Rui

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Abstract: STEM education is an education which is most fundamental, comprehensive, creative and economic. It is also a sensational point for education competition, development and reform force for all countries. Overseas STEM education research has produced some results of theoretical and practical value. For domestic STEM education research, it is still in infancy. By exploring the development status of foreign STEM education research, as well as the development trend of the future, it can provide valuable experiences and the blueprint for high-quality research and enhances STEM education in our country. Based on ERIC database, the paper quantifes the relevant literature on STEM Education abroad in recent years. By keyword co-occurrence of high-frequency analysis, factor analysis, cluster analysis, multidimensional scaling, it can be seen on STEM Education research primarily are STEM education theory, STEM Education Research Methods, STEM education school change, STEM education curriculum coherence, STEM education groups and so on. Future research will focus on STEM education integration, partners in education, STEM for children and multifaceted evaluation.

Keywords: STEM; ERIC; Co-word Analysis; Mapping Knowledge; Trends

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Research on Design and Implementation Strategy of Smart Class Teaching in the Ara of "Internet +"

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Abstract: The smart class is the inevitable result of the "Internet +" information age. It focuses on teaching, classroom, teachers and students' activities. Using the "Internet +" way of thinking and big data, cloud computing and other new generation of information technology to create intelligent, efcient classroom, to achieve the whole application process before class, in class, after class, and promote intellectual development of students. Compared with traditional classroom teaching process structure, smart classroom teaching process can take the "three-stage ten steps," structural model. Before class stage, it takes learning situation analysis as the core. In class stage, it takes the teacher-student interaction as the key. After class stage, it t focuses on personalized counseling. Based on the smart class information technology platform, this paper designs teaching objectives, implements interactive teaching, creates teaching design and implementation strategy.

Keywords: "Internet +"; Smart Class; Teaching Process Structure; Instructional Design; Teaching Strategies