

The Model Construction and Platform Development of Students' Originality Incubator System

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1. Introduction

The cultivation of technological innovative talents has always been the top priority of countries all over the world. Prior researches have focus on foster students' innovation education by changing governmental strategies or teaching methods (Van Vught, 1989; Shavinina, 2013). Gunnarsdottir (2013) suggested that in innovation education, ideation process is been described as Need-Solution-Products to access their creative. Children gather, analysis and share their needs, solutions and present their products in a learning community environment. With the development of network and information technology, it provides students an easy way to learn and communicate their own ideas in school or outside.

Therefore, this paper is concerned that the originality incubation inner process of undergraduates in a social networking environment, constructed a model of originality incubation system for college students and develop an 'Idea Pool' platform which support the college students' originality generation, development process and formation of learning community. The purpose of 'Idea Pool' is to enhance students' innovative capability by promoting the constant iteration of originality groups in the originality height and knowledge depth, as well as the maturity of originality.

2. Model Construction of Students' Creative Incubator System

This study constructs a model of originality incubation system for college students on the basis of the new concept development theory (NCD theory) which proposed by Koen (2001). The originality incubation system model describes the process of forming feasible originality from the original originality, and it mainly consists of four elements, including the opportunity recognition, opportunity analysis, idea genesis and idea selection. The model is shown in the figure1.

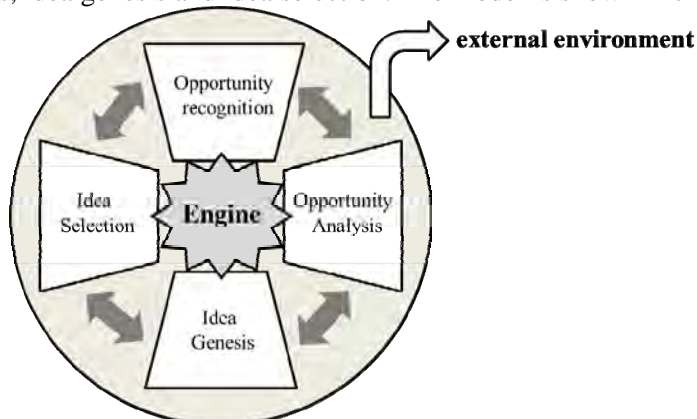


Figure 1. Undergraduate originality incubation model.

The system model mainly consists of the elements, relations, engine and influence of environment on elements.

External environment. During the originality incubation process, environmental factors influencing the creative process mainly consist of the creative atmosphere in campus, strength of the

sponsor of creative activities, strength of the competition group involving in the creative activities, research trend of the creative projects, as well as the technological development.

Engine. Engine is the power that drives the cyclic motion. During the originality incubation process, the communications with peers and teachers, as well as the study of domain knowledge are the main strength of promoting the element cycle in the originality incubation process. In addition, the leadership of group leaders, capacity of group members, collaborative atmosphere of the group, and teacher's guidance are also of great significance for driving the creative process.

Four internal factors. Until the final feasible creative prototype is formed, these four factors of creative process reflect an iterative loop, rather than the linear relationship. In other words, the creative process has no specific starting point and terminal point. The originality may start at any element or finish at any element. Furthermore, the originality may iterate for several times in one element and then transfer to another element, and it may also iterate among the elements.

3. The framework and function design of 'Idea Pool'

According to the originality incubation model for undergraduates proposed previously, it can be discovered that the creative process is a random and iterative process, and such a process may be characterized by many chances. During such a process, it may require an open environment for the generation of opportunities, as well as an open environment for promoting the effective communication and the constant maturity of originality, especially in the idea genesis and opportunity recognition two links. 'Idea Pool' polish the immature originality into feasible originality by focusing on the accumulation of partners, resources, discussion and relevance. The process of feasible originality generation in 'Idea Pool' is shown in the figure2.

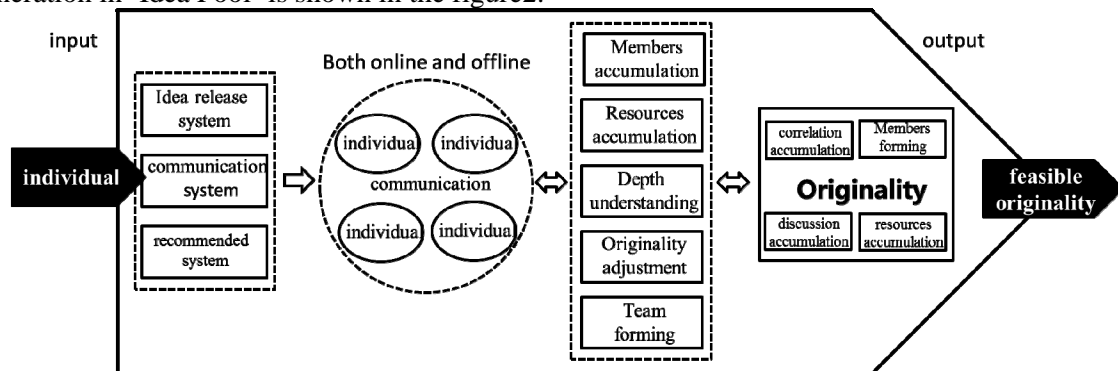


Figure2. The framework of feasible originality generation in 'Idea Pool'

This platform mainly consists of the following three systems, including the idea release system, communication system and recommended system, and the overall frame diagram is shown in Figure 3.

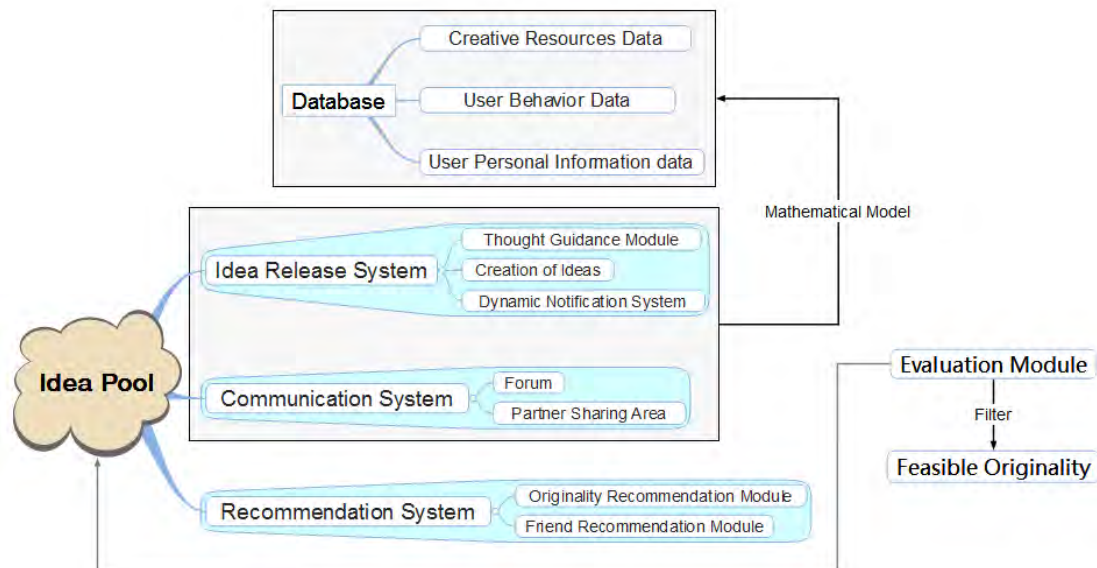


Figure 3. Overall framework of 'Idea Pool' educational platform.

In 'Idea Pool', Idea release system sets the template for guiding the thoughts, and provides three problems for clearing the thoughts, namely targeted group, problems that shall be settled, and possible solutions; Communication system consists of the forum and partner sharing area. The design of the forum mainly adopts the classification guide, and users can set up different themes for seminar discussion, including on-line and off-line; Resource recommendation system can extract the key words for the user according to the concern domain they selected and the favorite ideas they labelled before, in order to save time for students, reduces the blindness of searching and improves the efficiency. One of the core interfaces of 'Idea Pool' is shown in Figure 3.



Figure 3. Front page of 'Idea Pool'.

4. Summary

'Idea Pool' mainly takes advantage of the on-line and off-line combined study method to help college students' generating and grinding originality by creating a favorable learning community. At present, the 'Idea Pool' is mainly promoted on campus, forming the network resource links with the originality as the center, so as to connect similar ideas and people with common ideas, and to promote the undergraduates for forming the originality circle.

So far, the 2.0 edition of this platform (Cooperating the action plan of Sun Yat-Sen University) has already been on trial in Sun Yat-Sen University. Till February 2014, the platform has already achieved 10 originalities, and the average originality reliance degree is 28.15%. The data we have collected was not very sufficient, next step we will take more evaluate data into consideration to investigate the usability and usefulness of the system.

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