Exploration on Cultivation of Application-Oriented and Innovative Talents in the Information Field under "Internet +" Environment

Huan-Song Yang
The Institute for Education Data Hangzhou Normal University, China

Jia-Ping Wu
The Institute for Education Data Hangzhou Normal University, China

ABSTRACT
The contradiction between the increasing integration of colleges and universities and the high degree of professionalism of industry demand for talents has become increasingly prominent, making the cultivation of innovative applied talents oriented to the industry demand become the important issue to be addressed urgently. The purpose of this project is to explore a mode of cultivating application-oriented and innovative talents who conform to the needs of regional economic development. The author puts forward the structure of "two libraries, six platforms" as the cultivating model, in order to effectively realize the seamless connection and cultivation of innovative talents among universities, enterprises and the government.

Keywords: Internet+, information, application, innovative talents, cultivating, two libraries and six platforms

INTRODUCTION

Reforming the innovative talents cultivating mode of institutions, guiding the organic linking among the personnel cultivating chain, the industrial chain and the innovation chain are among the most popular talent cultivating topics for the moment. Therefore, an important task placed ahead of colleges and universities is an efficient, high-quality, low-cost and innovative application talent cultivation mode that conforms to the regional economic development.

Application-oriented innovative talents are specifically divided into engineering talents, technical talents and skilled talents. A main role of application-oriented and innovative talents is to employ objective laws to obtain benefits for the society. Application-oriented undergraduate education is the main part of the applied education. The applied talents in the undergraduate level consist of engineering talents and technical talents. The former mainly engages in transforming scientific principles and the knowledge of discipline system into design schemes or design drawings; While the latter mainly works on development, management, operation and other activities in the process of transforming design schemes and drawings into products, who are oriented at engineers or applied talents who can transform science and technology into real productive forces in the field of applied undergraduate talents shall process with both the breadth and depth in terms of knowledge bases, own strong capabilities of technical application and innovation in terms of competencies as well as have high professional quality and certain non-professional quality in terms of comprehensive quality.

Correspondence: Huan-Song Yang, Professor, *Hangzhou Institute of Service Engineering,Hangzhou Normal University,Zhejiang.Address to No.2318, Yuhangtang Rd., Yuhang Dist., Hangzhou City , Zhejiang ,China.Tel: 13588870128..*
✉ hzjyhs@163.com

State of the literature

- What is the purpose of higher education and what changes have taken place in today's academia?
- New challenges for higher education.
- Challenges and opportunities of teaching experience.

Contribution of this paper to the literature

- It points out main existing problems of the higher education.
- Put forward solutions and practice to the cultivation of innovative and entrepreneurship personnel based on "Internet +"
- It also has a good reference to the cultivation of innovative, enterprising and applied talents in other fields.

The Main Problems Existing in the Training of Applied and Innovative Talents in the Field of Information Application

(1) Poor practical teaching capabilities of teaching staff - In a large number of undergraduate institutions, basically no experience in the enterprise inside the work, To X College, for example, there are only 15 independent teachers with independent development projects, accounting for only 20% of the total number of teachers, and this 15 teachers, with modern project development of about 10 people, that is less than 14%. Most of the teachers in colleges and universities are a school graduate to the school when the teacher, its practical ability is not strong, classroom teaching of course, will not have good results.

(2) The students' poor motivation in autonomous learning - Since the enrollment as freshmen, most of the students are confused in their positioning and the future career they will embark on. If institutions do not pay attention to guide them, many students will lose interest and motivation in self-study in the following study gradually. Although many universities adopted the "project-driven" teaching method and achieved some results, but often a lot of "project-driven" teaching is not complete. Students involved in the project don't have a systematic study of knowledge, resulting in a comprehensive project teaching means not going through. Still, this project-driven cannot fully drive the students to learn independently.

(3) Substandard teaching contents and process - As the teacher practice teaching ability level, coupled with "teaching content" and "teaching process" control the standardization of different, so different teachers cultivate the quality of students vary widely.

(4) Insufficient learning practice of students - At present, colleges and universities to cultivate information talents, the real environment of the actual combat content is very small, a large number of students move from books to books, this leads to the cultivation of students cannot meet the needs of enterprises.

(5) Lack of personalized teaching content - At present, the construction of high-quality resources for the future reaches its climax, laying a solid foundation for the wisdom classroom in the future. For good and average students, whether the differentiation can be achieved in learning script, not only in theoretical content, but also in project practical cases which are designed with different difficulty ratio for different students, have not been achieved.

(6) Insufficient means for value conversion of student academic performance -Now the evaluation of student achievement is basically the means used are scores, such as a student Java programming 80 points, C language 75 points, but for students or employers, this score is not to its Value, that is, there is no way for the employer is very clear evaluation or whether the students in the end is able to do the job candidates need to recruit candidates.

(7) Inadequate methods for analyzing students' learning and teachers' teaching behaviors - Now the information technology has enough to support the student learning behavior and teacher teaching behavior analysis, but to do scientific analysis, it is necessary to teaching content and teaching process seamless information docking, the current institutions of information means just to achieve The data upload and download documents management functions, there is no scientific means of analysis.

(8) Mismatch between actual talents needed by enterprises and those cultivated in colleges and universities - The mismatch between actual talents needed by enterprises and those cultivated in colleges and universities has been a trouble for many years; however, still there have been no effective solutions. As a consequence, it is hard for the graduates to immediately engage themselves in production and innovation. Apart from the teaching staff of colleges and universities, the unestablished college-enterprise interests community is also to blame for this. There are no production demands or innovative requirements of enterprises in the textbooks intended for college students. In addition, as colleges and universities have poor knowledge of further development of enterprises, they have to turn to commissioned agencies for talent training or foster needed talents by establishing their own schools.

(9) The lack of effective communication and cooperation among colleges and universities of the same region - Each school has different characteristics of running a school, and information talents training in various institutions in terms of cultivation characteristics and level of teachers are also different. The demand from enterprises for information talents is not the same as well. Due to the personality differences among information graduates and the various technical capabilities, they cannot do everything well. With the so-called competition among institutions, the communication and cooperation between institutions are insufficient, affecting the cultivation of talents demanded by enterprises.

(10) Low conversion rate of scientific research achievements by colleges and universities, poor technological problem tackling capabilities of enterprises and slow product update - According to reports, currently the conversion rate of scientific research achievements by colleges and universities is averaged below 10%, with lots of scientific research laying aside and neglected. However, a large number of scientific research problems lack of public relations personnel, product aging, and a serious shortage of business innovation. The real reason for this lies in the fact that no effective project trading platforms between colleges and enterprises have been formed, and the interests community is yet to be formed.
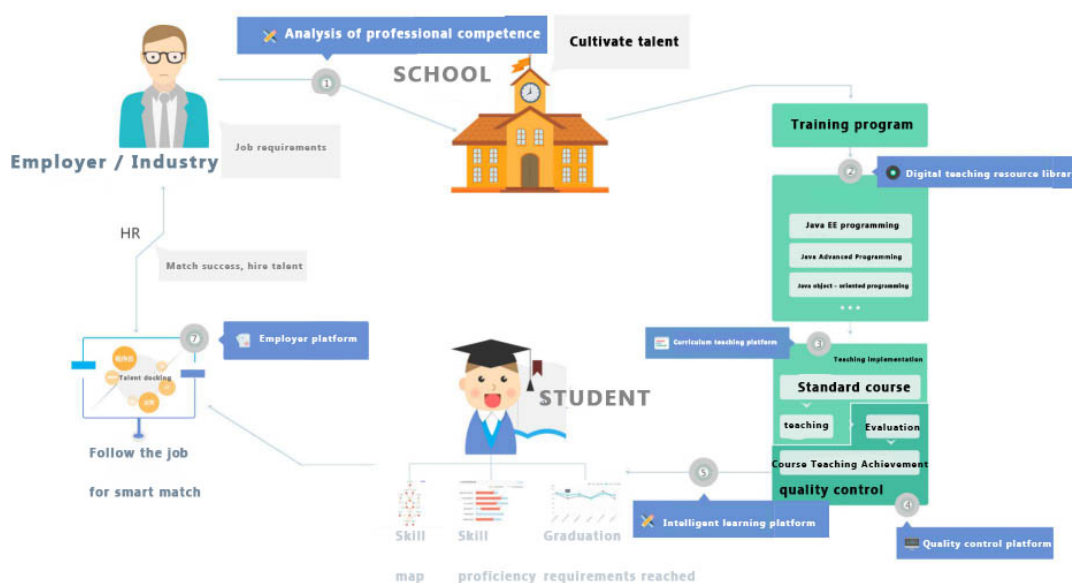

Figure 1. Based on the "Internet +" application - oriented innovative entrepreneurial talent training early solution ideas

Solutions and Practice to the Cultivation of Innovative and Entrepreneurship Personnel Based on "Internet +"

The innovation of the application and innovation oriented talents training mode can fully utilize the "Internet +" mode to effectively integrate, so as to solve the above 10 problems (as referred **Figure 1**).

Later on the basis of the above, we can adopt the solution of "two libraries and six platforms", (as referred **Figure 2**).

(1) Digital teaching resource library - All courses in the information major are effectively digitized and put into the resource library for sharing to institutions such as universities and off-campus enterprises.

(2) Innovative and entrepreneurship resource library - Innovation and entrepreneurship ideas of university teachers and students are put into the resource library for enterprises to choose; The enterprise's innovative technical difficulties can be input into the resource library at any time into this resource library for colleges and universities to carry out technical researches.

(3) Practical integrated teaching platform - A comprehensive teaching system is introduced to cover all processes of theoretical teaching and practical teaching, especially cases resources of enterprise-level cultivating projects.The establishment of a set of domestic first-class three-dimensional digital resource libraries, especially in the field of practical teaching can drive students' learning interests and professional constructions to achieve high-quality student cultivation, promote high-quality employment as well as innovation and entrepreneurship for certain outstanding students with experience projects. Enterprise resources and qualified teachers from enterprises can be invited to the on-campus practice to make connection of knowledge system between on-campus teachers' theoretical teaching content and enterprise teachers' practical training. By doing so, daily teaching and practical training can be integrated truly; School teachers can carry out the connection by their engagement. Also, a talent evaluation system that is internationally compatible should be imported, particularly those certification systems of international mainstream IT vendors, so that the evaluation criteria for talent can be grounded.
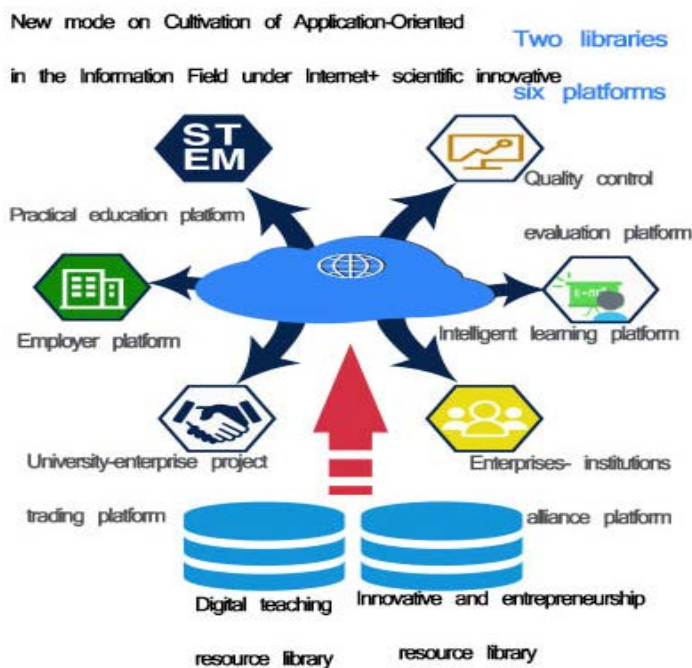

Figure 2. Two libraries, six platforms

(4) Quality control platform - Information technology, "Internet+ education" and big-data processing model are utilized to transform the existing classes for academic education, especially the classes of practical teaching. Moreover, the digital resources shall be effectively integrated into each teaching scene in the class through fully enhancing the use convenience of digital resources, so that it can carry out quality monitoring and quantified evaluation on each teaching link. The evaluation method of the student's learning effect should be diversified. In addition to the routine examination, the ability of reconstructing projects is in an objective evaluative dimension, which can be also matched with the position competence. And a curve of position competence that is in line with the industry can be obtained for evaluation; Based on students' quantified abilities, evaluation on the teaching quality can be transparent and quantified. Refined analysis dimension like the teaching effect of each class, the teaching effect of each teaching scene and the teaching effect of each case teaching can be tracked, which cannot be reached by the traditional evaluation. (as referred **Figure 3-7**).

(5) Intelligent learning platform - The intelligent learning platform is a data analysis learning platform based on the "quality monitoring platform" (including the evaluation platform) for monitoring students' technology mastering and tracking their evaluations. Based on that, it can analyze students' strong and weak points in knowledge mastering. Fragments of teaching contents and supplement of advance learning are provided in the intelligent learning platform. According to students' strengths and weaknesses on knowledge or technical points, pointed learning contents can be made. Moreover, those students who obtain high scores in the learning evaluation can also find contents for self-learning to move forward, realizing personalized student service.

(6) Employer platform - As an occupational capability standard has been formulated with requirements of local enterprises and corresponding international enterprises as standards. When enterprises or new enterprises require related talents, they can view each student's competence from entrance to graduation or find suitable students for internship or employment through intelligent matching of big data.
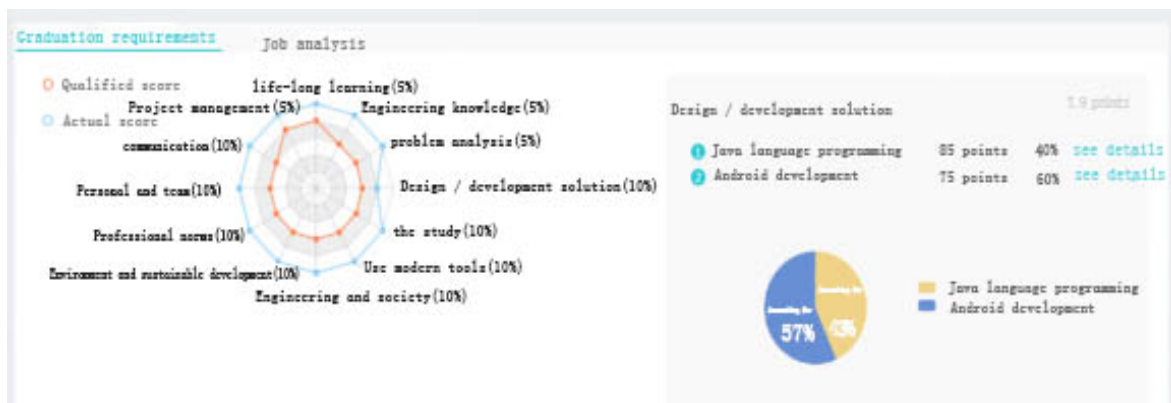

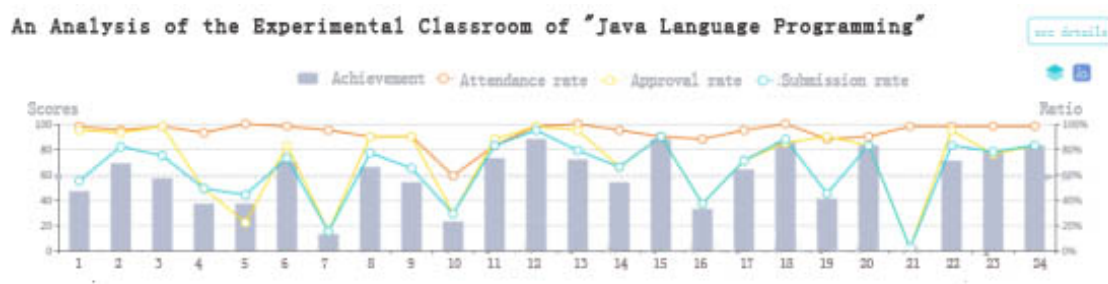**Figure 3.** Analysis of Achievement Based on Big Data

Figure 4. Classroom analysis based on Big data
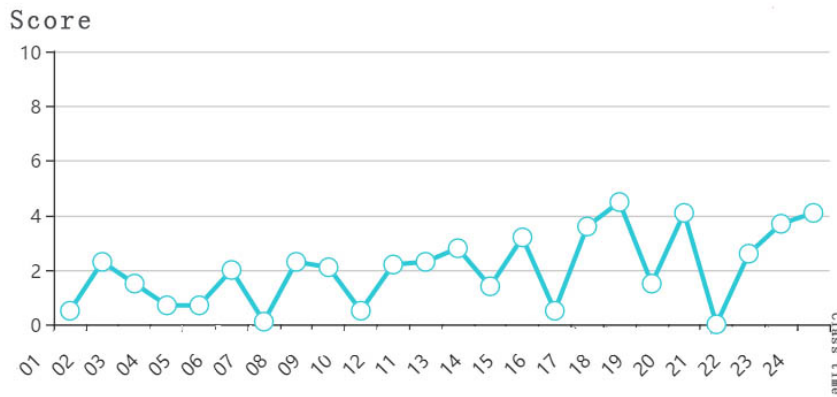
Learning effect analysis

Figure 5. Analysis of Learning Effect Based on Big Data
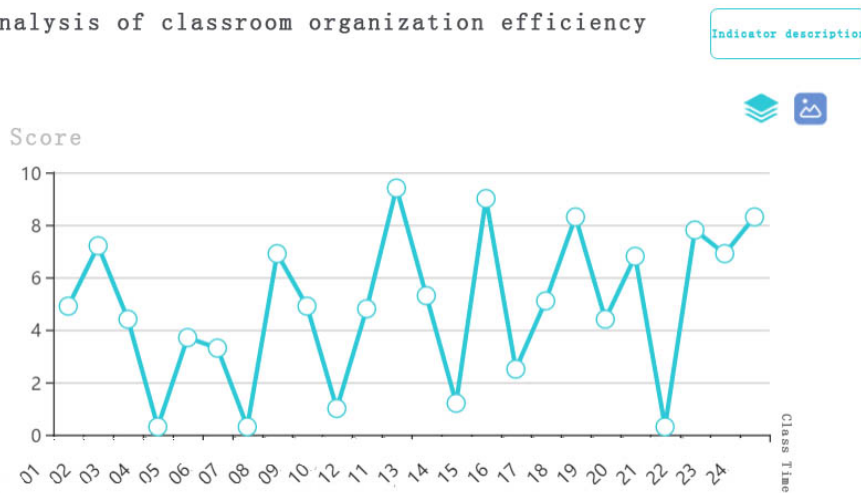
Analysis of classroom organization efficiency

Figure 6. Analysis of classroom efficiency based on Big data

Figure 7. Based on Big data employment ability matching map

(7) University-enterprise project trading platform - Colleges and universities have many innovations yet with a low conversion rate, while enterprises have low innovation capacity, product aging and lacking technicians for tackling key problems in scientific and technological projects. On the one hand, universities and enterprises can improve transactions and transformation of achievements of universities; On the other hand, enterprises can issue key research projects for actively invite colleges and universities to participate in joint researches. In this way, local institutions and local enterprises can become an interest community.

(8) Enterprises- institutions alliance platform - There are numerous enterprises and products in a region, yet enterprises nearby rarely contact with each other. Likewise, there are several colleges and universities with different features in the same area. The establishment of the platform can contribute to forming a real enterprise-university alliance for timely communication and exchanges, so as to realize the sharing and cooperation among institutions, universities and enterprises in the region for developing regional economy.

The above "two libraries, six platforms" can effectively present the mode of cultivating innovative and enterprising talents in universities.

CONCLUSION

It's worth researching the exploration of cultivation mode of innovative, enterprising and applied talents in the information field under the "Internet +" environment. The solution of "two libraries, six platforms" as an expectable solution, has been successfully implemented in some part. Other than practices in our university, over 110 colleges and universities like Beijing Union University, Zhengzhou University, East China Jiaotong University, Anhui Normal University, Shanxi Agricultural University, National Defense Science and Technology, Shanghai Institute of Technology, Changzhou Institute of Technology, Zhejiang Gongshang University and Zhejiang SCI-TECH University, etc. have been involved in the practices of the above cultivation mode, achieving a good effect. Although the solution mainly focuses on the cultivation of innovative and enterprising talents in the information field, it also has a good reference to the cultivation of innovative, enterprising and applied talents in other fields.

ACKNOWLEDGEMENTS

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