

Establishing China's First UX Master Program Based on Applied Psychology Perspective

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Abstract. Many methods have illustrated to demonstrate how the user experience (UX) influenced on our lives. The notion of UX is much more complicated since it has combined psychologists, social and physiological concepts. However, only a few universities and institutions in China have established the discipline that combined UX and psychology. This paper presents a different perspective of promoting combination of user experience and applied psychology. Based on the talents cultivation of User Experience, Master of Applied Psychology of the Faculty of Psychology at Beijing Normal University is the successful program from the psychological perspective. An additional reason of establishing this program is to cultivate professional talents who have great capability on psychological experiments and analytical methods in Human Computer Interaction (HCI) and User Experience (UX) field.

Keywords: User experience · Psychology · Faculty of psychology · Master of applied psychology

1 Introduction

In contemporary society, it is indispensable and essential that academic innovation should be closely combined with technology creation. Especially in China, economic boom calls for psychological health that ought to be integrated into the university missions. Based on this background, Faculty of Psychology at Beijing Normal University established the first User Experience research direction for master's degree in 2016. Since the creation of Psychology as the general course in 1902, Faculty of Psychology has become a distinguished Faculty until 2001. Even though the conception and application of UX has developed greatly, it has been difficult to gain a common agreement on the combination of UX and psychology. In this paper, we will demonstrate theoretical and empirical contribution that the first UX master program can make from psychological perspective.

The concept of User Experience was firstly proposed (see Hassenzahl and Tractinsky 2011) and then it had become a prevalent and widespread issue in the field of human-computer interaction (HCI) and interaction design. The conception developments and evolution for User Experience can be traced back to the machine age during the 19th and early 20th centuries. The application of internet and computers has facilitated people's lives tremendously. Donald Norman conceived the notion that the term "user experience" would

be applicable to the affective aspects of usage. Subsequently, a review of his earlier works had suggested that the term “user experience” was used to illustrate a shift to include affective factors, along with the prior behavioral concerns, which had been conventionally meditated in the field. Law and van Schaik (2010) discussed that there are three characteristics of UX including dynamic, context-dependent and subjective. Frederick Winslow Taylor deemed that it is vital to explore more efficient approaches to improve labors’ productivity. Taylor’s research into the efficiency of interactions between workers and their apparatus was an early precursor to much of what UX professionals think about today. Over the last two decades, as technology and internet developed and matured, interactive products became more useful and usable. Users’ demand for products were concentrated on psychological need rather than their function.

Until the 21th century, it has evolved into a highly interdisciplinary field, which combines industrial design, human computer interaction, graphical interface design, interactive design, information design, usability, psychology, anthropology, architecture, sociology, computer science, cognitive science, etc. Many usability practitioners continue to research and attend to affective factors associated with end-users, and have been doing so for years, long before the term “user experience” was introduced in the mid-1990s. Several developments affected the rise of interest in the user experience. According to specific design briefs, UX might also involve sound design, communication design, game design, etc. With the social development and economic growth, China starts to promote innovation design, thus UX Design has become popular since then.

2 Current Talents Cultivation Situation

When the User Experience (UX) was established as an industry and discipline, people had often discussed UX from the perspective of design, technology and business. Nevertheless, it is scarcely disputed from a psychological view. Especially in the field of discipline setup and talents cultivation, Chinese research institutions and professional settings place more emphasis on HCI, industrial design and visual communication. And only a few psychological schools have opened engineering psychology and other related majors. Currently, Shanxi Normal University has set up space psychology major. And the engineering psychology major for master degree has been opened at Zhejiang Sci-Tech University (ZSTU). Then School Of Education at Capital Normal University opened UX and human analysis major and School of Communication and Design of Sun Yat-sen University explored specializations such as Interactive Design. Most of schools in these universities which have industrial design at Tsinghua University, Beijing Institute of Technology, Beijing University of Science and Technology have enrolled master degree students and only a few of them can enroll doctor degree students.

3 Program Background

In the case of User Experience, we deem that it is a highly interdisciplinary area that can combine the principles of industrial design, human-computer interaction, graphical interface design, interactive design, information design, usability, psychology,

anthropology, architecture, sociology, computer science, cognitive science and other fields of knowledge. Depending on the design goals of a project, User Experience may also involve sound design, communication design, and tourism design. As the core object of it is the humanity, it is also the research object for psychology. Subsequently, psychology should be more influential in teaching, research and practice for User Experience.

Based on these analyses, Faculty of Psychology at Beijing Normal University utilized advantages on discipline and followed the economic, social, scientific and technological development trends. From the psychological perspective, we have set China's first UX professional master's program for demonstrating the necessity and feasibility (Fig. 1).

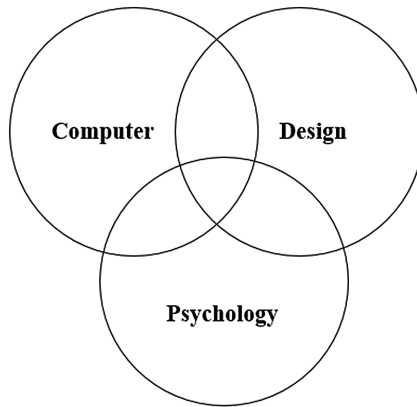


Fig. 1. Interdisciplinary of user experience

3.1 National Demands

In contemporary era, from the perspective of meeting the national demands, China's economy is facing unprecedented opportunities and challenges. Therefore, under the circumstance of national "four comprehensive" strategy, "encouraging innovation and public entrepreneurship" and "Internet + ", whether the completion of model transformation for economic development and industrial restructuring will determine whether China can successfully cross the middle-income gap for accomplishing "Two one hundred". While in the process of innovation, entrepreneurship and the development of the Internet industry, the user experience has played a more significant role. To a large extent, the success of iPhone, Mi, Baidu and Wechat also definitely attributes to the success of UX. Hence, the importance of user experience for business success is being increasingly emphasized which has formed a relatively complete theoretical system.

Many domestic enterprises have set up the user research centers respectively. The fact has demonstrated the importance of user experience. Domestic user experience center is mainly distributed in the manufacturing, IT, communications, finance and insurance industry and Internet companies. UED has established in Alibaba since 2000

and after 2000 the well-known domestic manufacturing companies such as Haier, Changhong and other companies have established user experience departments. The user experience center of IT communication industry has been established after 2000, among which the Lenovo Research Center has established the User Research Center in 2002 and then after that Huawei Cor. has established the UCD department in 2005. Most of commercial banks in 2013 placed emphasis on user experience, which benefited from the major banks in the field of mobile banking customers to compete. Nowadays, UX research in China is becoming prevalent and Baidu, Tencent, DiDi, NetEase, QIHU360, and all of these domestic companies own their User Experience Design Centers.

3.2 The Commitment to Our Community

Psychology itself is humanistic concern subject, so its purpose is to make people lead happier and self-realization life. Subsequently, the application of psychology should concentrate on its social effects that can make our community become more desirable. Since the industrial revolution, the relationship between people and things has been clearly transformed from the “instrumental rationality” into the “people-oriented”. A product can not only provide its tool, but also make people feel well and well-being. What UX concerned is the interaction between people and things. In recent years, UX has attracted more tremendous attention in various fields of manufacturers. UX belongs to the field of cognitive psychology and also is the important application development direction as well. Therefore, it can solve the problem of friendly interface interaction between human and products firstly. What’s more, people will formulate an efficient and happy work circumstance for highlighting the respect for humanity. The establishment of UX research direction will transmit psychological knowledge into the benefits for the whole society which can be perceived. It will be promoted to produce more desirable products so that more people understand psychology and benefit from psychology.

3.3 Cultural Accumulation of BNU

Faculty of Psychology, whose origin dates back to the Normal College of the Imperial University of Peking founded in 1902, formed excellent traditions and distinguished features during its over 100 years of history. After the creation of Psychology as the general course, the first psychology laboratory in China was established in 1920. Department of Psychology was officially founded in 1980 and developed to the Faculty of Psychology that is a distinctive institution in 2001.

Faculty of Psychology has a National Scientific Training Base for Research and Education, a National Key Developmental Psychology Research Base (accredited by the Chinese Ministry of Education), a Beijing Key Laboratory of Applied Experimental Psychology, a National Experimental Psychology Teaching Center, and a National Teaching Center for Virtual Simulation. The Faculty is authorized to confer doctoral degrees in Psychology and provide training to postdocs. In a ranking published by the Chinese Ministry of Education, it has been continuously topping the list. The subjects

“Psychopathology and Psychology” and “Neuroscience and Behavioral Science” are ranked among the top 1% of ESI.

3.4 Talent Cultivation Objective of MAP

Applied Master Degree is distinguished from the academic master degree in China. The most prominent Applied Master Degree is MBA in the world, which can be traced to more than 100 years of history. Beijing Normal University opened the user experience master's degree in applied psychology.

When it comes to the promotion of talent cultivation, the ultimate goal of Applied Master Degree is to train professionals who can successfully integrate psychological knowledge into their work, and effectively promote the development of related industries. From the view of current cultivation of relevant talents, most of domestic universities pay more emphasis on computer technology or art design. Consequently, user experience is lack of its core foundation, that is, talent cultivation objective based on the psychological background. With the improvement of UX in domestic IT and Internet enterprises, the importance of the gradual increase in the demand for relevant personnel is no longer satisfied with a single interface design, interactive optimization.

4 Introduction for UX of Applied Master Degree at BNU

Since 2011, most of universities have begun to enroll students majoring in Master of Applied Psychology in China. And Beijing Normal University became the first pioneer which participated in this admission.

Until now, Master of Applied Psychology has become the best applied master degree major in China. Because its academic and social influence, it is essential to lead MAP to develop and cultivate specialized research direction.

First and foremost, the establishment of UX can enhance the professional level for master's degree. Since the essence of MAP is the application of psychology, obviously, from the application level, the psychological application to the other individuals is relatively higher than to themselves. Similarly, when psychology is applied to product design and user experience, it is more vital than that in the psychological and human resources management. From the perspective of application of artificial intelligence and human-computer interaction, UX will be the focus issue in contemporary era (Fig. 2).

Moreover, the establishment of UX will promote knowledge transformation of cognitive psychology. Because cognitive psychology is one of the prior disciplines in BNU, it can facilitate practical application of academic capabilities. In addition, it can not only be beneficial for discipline improvement, but can help universities integrate the other disciplines.

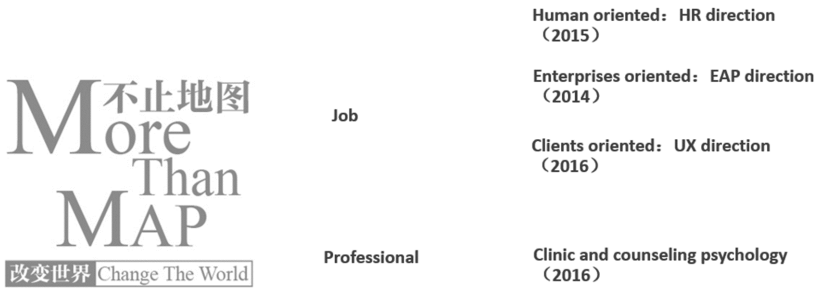


Fig. 2. MAP design thinking of major orientation

According to the survey, Faculty of Psychology hold an admission press on UX direction in July, 2015. In March, 2016, there were 63 master degree students enrolled who have distinguished educational background. In March 2016, we admitted the first 63 students, of which undergraduate colleges and universities in 985,211 of China accounted for 41%. Bachelors majoring in design, computer, psychology, industrial design accounted for 71%. Students’ English level over CET 6 accounted for 44%. In July and August, 2016, more than 140 candidates enrolled in 2017 who had passed pre-enrollment interview, which nearly 100 candidates to participate in. Both the enrollment and the number of applicants in 2017 have a greater growth than 2016. In March 2017, about 60 students majoring in UX will be expected to enter the Faculty (Fig. 3).

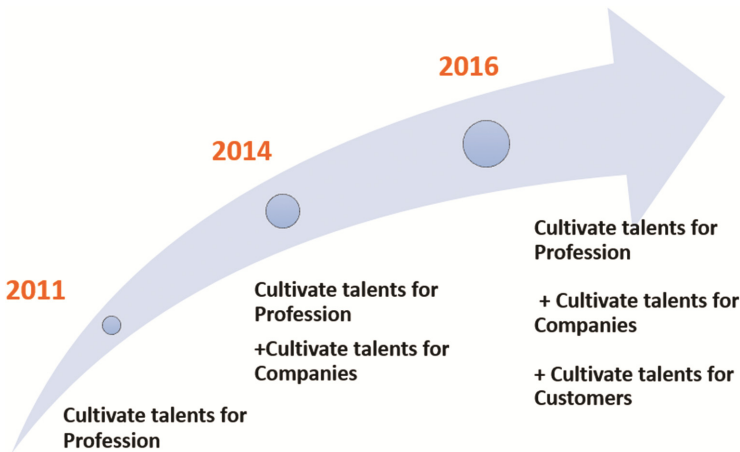


Fig. 3. Cultivation evolution of faculty of psychology

5 Cultivation Characteristics

Students majoring in the User Experience of Beijing Normal University emphasize on solving practical problems. In the process of training, the Faculty attached great importance to the internship for creating a new model called Trinitarian which

include curriculum, internship and thesis. The thesis process will encourage students to choose their subjects, solve a real problem, and design the corresponding products or systems. So students can tremendously enhance their ability to solve problems based on their theoretical accumulation (Fig. 4).

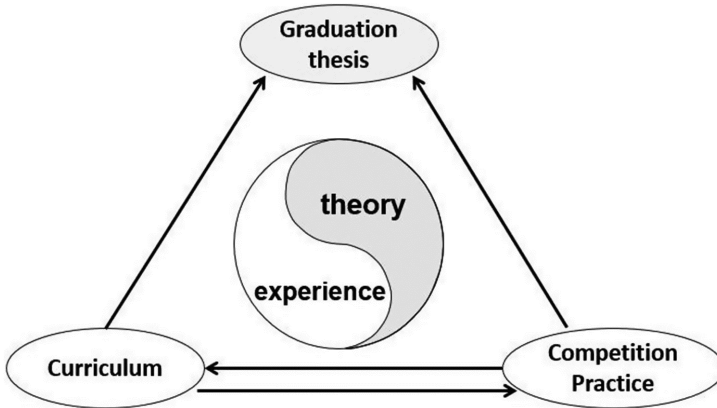


Fig. 4. MAP curriculum, internship and thesis

Action learning theory was firstly proposed by the British Professor Revans (1982). He deemed that especially in management practice, Action learning requires a group of people who can acquire solution based on the existing knowledge of structured knowledge through questioning and reflection on the composition of important issues. We adopt Revans (1998) definition of Action learning that individual knowledge (L) was composed of two ingredients: structural knowledge (P) and query proposal (Q), which compose the formula: $LP + Q$. P represents traditional knowledge while Q refers to putting forward to insightful question. And it is the Q that is the essential technique to encourage innovation and efficient learning.

5.1 Practice Courses

Courses design includes Psychological Foundations, research methods and user experience introduction courses, such as, cognitive psychology, social psychology, data analysis and visualization, UX overview. Specialized courses focus on experiment, application and reflection, such as, advanced experimental techniques of psychology, VR/AR scenario design, UX design reflection.

Meanwhile, we designed a practical course, such as UX Introduction course. And the introduction of Land Rover task named “Benchmarking User experience Study of China’s Natural Language Voice Recognition, Jaguar Land” which has combined teaching and project practice. Under Chinese circumstance, students utilize a variety of means of information and user experience research methods for researching and resolving natural speech recognition benchmark problem through the simulation of the driver and virtual simulation driving system (Fig. 5).



Fig. 5. UX students utilizing visual driving for research

5.2 Competition Practice

At the beginning of 2017, the Faculty led deep collaboration with the Microsoft Asian Technology Research Center (STCA). The researches were implemented under the Microsoft Cortana devices for studying the user's perception, needs, pain points, environment, and potential use. The purpose is for making UX specialists to utilize real-life experiences to provide Microsoft designers, researchers, and developers with direct data and new patterns of interaction for the Cortana family in the future.

The goal of this contest is to create a clear design for the Cortana interface by UX students and Studio 8 experts. A successful project required uncovering user requirements for innovation, feedback, and analysis based on a network-less scenario. As part of the discovery and problem definition phase, during the conceptual design phase, the team will provide multiple examples which can demonstrate how the interface is designed and user-friendly.

There were 60 students who took part in and they were divided into 3 groups. Each team (20 students) will be divided into 3 groups, so each one has 6–7 students. Experts from Microsoft's Asian Technology Research Center Studio8 will regularly organize workshops and seminars to ensure continuing guidance on project progress. Some common user experience research methods and techniques will be used prevalently, such as interactive quality, emotional collage board, mind map, storyboard, user trip map, video visualization, SWOT, trend analysis and so on.

5.3 Oversea Study

To expand the international perspective of students, Faculty of Psychology has always been encouraging students to participate in more overseas programs. There are short-term exchange study and long-term exchange programs. At the end of 2016, 18 UX students, led by professional teachers, attended workshops at the Industrial Design

Institute of Delft University of Technology in the Netherlands and the Industrial Design Institute in Southern Denmark. Through the teamwork study with the local students, students' horizons were broadened hugely. In addition, the collaboration contracts have signed between the Faculty with Southern Denmark University in Denmark, Kochi Engineering University in Japan and Purdue University in the US. About 12 UX students will participate in a forty-five-day or three-month exchange program in March, 2017.

6 Program Formulation

In the curriculum design, students and enterprises will be combined for the specific needs. Consistent revision and adjustment will make it more suitable for student development and business demand.

When it comes to the internship, students' orientation is the most significant and we will provide more opportunities for cooperation with enterprises. For example, more enterprises are willing to carry out joint research projects, providing UX professional talents, incubating UX products, regularly holding UX industry forums and training and so on.

In the aspect of international exchange, we will implement more cooperation with overseas universities to develop short-term study programs, exchange programs and double degree programs.

7 Conclusion

In the ultimate analysis, based on psychological perspective, the application of UX for cultivation of talents can be essentially beneficial and have profound meaning for applied psychology. This paper focuses on the relationship between UX and psychology and contributes to the theoretical and practical field. Faculty of Psychology at Beijing Normal University will meet national emergent demands and formulate more optimized cultivation process for enhancing the maturity in this field. Consequently, this article shows that with "Internet+" development, it is possible for the UX to be more comprehensive. One fundamental conclusion derived from this study is that UX Master Program at Faculty of Psychology is beneficial for applied talents training and combination between UX and psychology for promoting their interdisciplinary character.

References

- Law, E.L.-C., van Schaik, P.: Modelling user experience – an agenda for research and practice. *Interact. Comput.* **22**(5), 313–322 (2010). doi:[10.1016/j.intcom.2010.04.006](https://doi.org/10.1016/j.intcom.2010.04.006)
http://en.wikipedia.org/wiki/User_experience#The_user_experience (2009)
- Hassenzahl, M., Tractinsky, N.: User experience – a research agenda. *Behav. Inf. Technol.* **25**(2), 91–97 (2011)
- Revsans, R.: *ABC of Action Learning: Empowering Managers to Act to Learn from Action*. Lemos and Crane, London (1998)
- Revsans, R.W.: What is action learning?. *J. Manag. Dev.* **1**(3), 64–75 (1982). doi:[10.1108/eb051529](https://doi.org/10.1108/eb051529)