A case of Integrating Language Learning Material Design Course into Revitalizing a Degraded Residential Urban Neighborhood through the University Social Responsibility Program

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Abstract— **The Ministry of Education of Taiwan promotes the University Social Responsibility program (USR), encourages universities to fulfill their social responsibilities by conducting renewing and reconstructing nearby degrading communities. Chung Yuan Christian University (CYCU), located in Taoyuan, Taiwan, picked up an adjacent Xiao-Li community as a target. For many years, CYCU has invested manpower and budgets from many departments in the College of Design, the Department of Environmental Engineering in the College of Science, and the Department of Teaching Chinese as a second language (TCSL) in the College of Humanities and Education. Based on the research, some community services were then established, community culture and environment were preserved and renewed, the results provide magnificent supports for the sustainable development of the community. In TCSL department, a two-semester course titled "Interactive Chinese Learning material Design" was integrated into the USR program. The research results of the community from each department was taken as parts of the reading resource of the course. Students have to study it, to go to the community, and to rewrite it into the form of game style tour guides, digital novels, or even second language reading materials focus on the trip to the community. The results show the students are more aware of the history and environment preservation issues after the project.**

Keywords—**visual novel, community renewal, game-based learning, environment preservation**

I. INTRODUCTION

The purpose of this paper is to present the environmental preservation of Taiwan in the context of University Social Responsibility program (U.S.R.) in Chung Yuan Christian University (CYCU). Since 2016, Taiwan government has introduced U.S.R. program to Universities in Taiwan. Many Universities have participated in the program and investigate their surrounding areas looking for declining communities to preserve their natural and cultural environment. In the year of 2018, 114 universities and 220 projects are implemented in the USR program. In CYCU, three projects were implemented in the U.S.R. program. Base on the environment of the selected community, each project develops differently.

A community called "Xiao-Li" is selected by College of Design of CYCU as one of the target communities to work with for two years in CYCU's U.S.R. program. Actually, The CYCU College of Design has been working with this community along for more than 6 years before the USR budget was initiated.

With the budget from USR program, The College of Design expanded the service scope, besides the departments in the College of Design like The Undergraduate Program in Social Design, the Department of Interior Design, the Department of Commercial Design, and the Department of Landscape Architecture, departments from other colleges like The Department of Environmental Engineering in the College of Engineering and the Department of Teaching Chinese as a Second Language (TCSL) in the College of Humanities and Education are all invited to participate in the program. These units work together on many aspects on Xiao-Li community.

Xiao-Li community, originally a traditional territory of one of the indigenous tribes which Dutch people called "Xiaoxiaoli" before Han immigrants has come [5]. Around 280 years ago after Mandurian Empire invaded China and expand her territory to Taiwan, riots and rebels everywhere within the empire. Many young men in the tribe were recruited into military to fight for the empire. With the decrease of man power and meanwhile the "indigenous tax" is still high, most tribes in Taiwan faced economic difficulties. Therefore, better irrigation system which produced more food for "indigenous tax" were introduced by Han people at that time. Thus more and more young Han immigrants and indigenous women married and then the sinofication process started [3][4].

As new irrigation system was introduced and sinofication process started, Xiao-Li become more and more prosperous and sinofied [1]. For almost 200 years, Xiao-Li become a famous granary and Hakka village in north Taiwan. As Taiwan came into Japan era, a new damp was built and a different irrigation system was reconstructed, Xiao-Li gradually declined. As Taiwan came into R.O.C. (Republic of China) era, many low rank soldiers from China settled in this area. The community thus includes traditional groups and the new immigrants. The traditional resident area is now occupied by residents who speak mainly Hakka language and inheriting a mixed Hakka culture. The new immigrant area is called "Jin-Cheng community". The average age in the area is high, ¼ of the population aged over 65, and most of them live along. Many order citizens have difficulty in moving and self-careing[2].

Tao-Yuan City was developed on the Tai-Yuan platform. Xiao-Li located on the edge of this platform, between a cliff and river. The urbanization never reaches this area. For years, Xiao-Li is considered underdeveloped. However, its rich culture and great location, a close suburb next to a crowded city, deserved more attention and care. Therefore, Xiao-Li becomes one of the target communities in CYCU's USR program[2].

II. RESULT AND DISCUSSION

A. CYCU USR Program in Xiao-Li

For CYCU's USR program in Xiao-Li in 2018, 343stdudents were enrolled. The first thing of the program is to launch field trips to discover the needs of the community in every aspect[2]. After that, four main tasks determined to do is described below:

1. Interior design and remodeling: The interior design and remodeling of aged houses of the older house owners in the community. During the visiting, many aged residents live in poor condition were found. The burden to help the aged citizen to remodel their resident places rise up.

2. Resident care workstation: Set up a workstation to help new residents and disadvantaged schoolchildren in learning. The workstation also holds a series of activities for the elders in the community.

3. Environmental Education: Cooperate with local elementary school and community development associations. Promote the concept of low carbon and environmentally friendly living and community through the associations in the school and Community Care Center.

4. Reshaping living environment: the most important goal of the program is to preserve the natural and cultural environment of the community. Thus this point can be described in many aspects as below:

    a) The planning and transformation of the Community environment. The department of Landscape in CYCU takes charge of this part. Teachers and students enter the community to interact with residents, understand local needs, work with residents, and discuss the solution. Improve the environmental sensitivity and awareness of local residents. To help the community to develop a better landscape and living space environment.

    b) Animal and plant survey. The department of Landscape in CYCU takes also charge of this part. During community observation, abundant animal and plant resources within the community were found. When the whole flora and fauna ecology is well established, the ecosystem can be balanced, and the development of agriculture and environment will be better off.

    c) Inventory resources: The department of Commercial Design, Environment Engineering, and the College of Design respectively take charge of this part. Inventory community resources and produce local teaching and introduction materials. All these works leave a record and for the discussion for the low-carbon space improvement for the community.

5. Designing and entrepreneurship. The final goal of USR does not stop on preserving the community as a museum and let along the residents. The residents are supposed to be empowered to have a better life. Thus, the final point is about the designing and entrepreneurship.

    a) Brand design and marketing for the community: Students in the USR program develop cultural innovation products from the perspective of social design, and create their own products like environmental education picture book, community tour guides, and webpage for the community.

    b) Digital platform and promotion: Digital platform and the promotion of the community were created to host students' products and program results. Students of the USR program create software products like digital tour guides, game-based tour guides, word painting, and AR images to promote the community.

    c) "Farming Experience" and "Micro Tour" program: Students from Social Design in the College of Design Designed educational farm tourism experiences program by combining 24 solar terms and local characteristics for exchange students and International academic cooperation.

B. CYCU USR Program's Present results and future

The USR program in CYCU is still an ongoing process. For the first year, some results were conducted as below:

1. Write local history: Publish video life stories, including publications, e-books, micro-movies, etc. Through images, media, etc., as a record of the reborn of an old community.

2. Xiao-Li brand: Organizing literature and history materials and publish in the forms of picture books, games, and other forms of creatives. Social design involves intervention from observation to creation, brings new image into society, and changes public awareness of the community.

3. Greenification and beautification of the community：Empower the community members with the awareness of the space beautification and the maintenance of the environment. For now a copper certification has been achieved and Silver certification is next goal.

4. Digitalize instructional materials：A complete setoff educational network to be built by integrating program results and resources like Universities for senior citizens, after school class, classroom for new immigrants, and homeschooling groups.

5. Big hands holding small hands: University provides its professions and sources to help building up educational resources' platform for the local K-12 schools. For

example, some students of USR provide learning and reading counseling for local elementary school students regularly.

6. Remodeling of aged houses: Students of USR from Interior Design department learned and experienced the spirit of human based design and inspire their cares and the sense of responsibility for the community. Two cases of aged house remodeling were completed. Improved designed home space and better community environment created a new life experience for the community [2].

C. Course integrated language education and environmental preserve

Among the courses that participated in the CYCU USR program, the course that integrated language education and environmental preserve is titled "The Design and Evaluation of Chinese Language Teaching Materials". The course is a three-credit course [8]. Students in this course usually learn to manage specific topic contents into digital Chinese language learning materials for language learners of certain levels. As we partook in the USR program, students are not limited in designing Chinese language learning materials, they are also encouraged to design Xiao-Li Community's digital natural and/or cultural Tour Guide for Chinese language learner or even for native speakers [6].

The digital carrier for the learning material designed were used to be web pages or Learning management systems. However, a visual novel authoring tool named "Renp'y" was introduced for students to present their works in this program.

Curriculum contents:

There are three parts included in this curriculum. The first part is about principles of learning material design for second language learners. The second part is about the programming of Ren'py. The third part is about studying the contents of Xiao-Li community. these three parts interpolated with each other during the whole semester.

Through the course, students worked in group to decide the topic contents and prospective user group of the learning materials they are going to create, dived into the community facts related to their topics, organized them as learning materials, then authoring them with the visual novel platform.

24 Students enrolled in this class were senior students in the college and students in master level. They have already taken many credits in the field of second language teaching and multicultural curriculum. Basic computer skills were also possessed. In addition, the course is selective, therefore, 24 students enrolled in this class are somehow motivated and qualified.

D. Teaching process

In Taiwan, a semester contains 18 weeks. "The Design and Evaluation of Chinese Language Teaching Materials" course is a one-semester course with 3 credit hours. Therefore, the total hours for the course is 54hours. The whole process of the course can be Depicted as a diagram below:
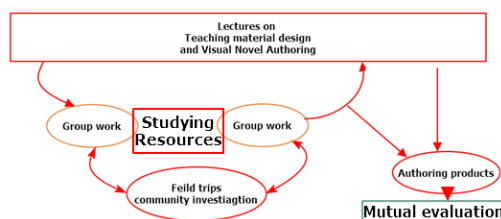

Figure 1. Process of the Course

1. Lectures on teaching material design and authoring tools: This part is mainly on lecture and teacher – student discussion. Principles for Designing Language Teaching Materials were introduced in this section. Since the course was integrated into a USR program, the course emphasized its focus on reading material design. Students were encouraged to use their creative potential to authorize innovative learning materials. The Learning Authoring tool introduced in this course is Ren'py, which is a visual novel game engine. In order to focus students' efforts more on the instructional material design, game structure with advanced functions which need more advanced coding skills was programmed beforehand for the students. Students only learn basic coding skills like posting texts, pictures, and films on their product.

2. Studying Resources: It's a basic requirement for a learning material designer to be very familiar with the contents that he/she is about to design. In order to design a community based learning material, students have to study everything about the community. Fortunately, the information about the Xiao-Li community has been accumulated for years. Some reports, books, or even picture books related to the natural and social environment of Xiao-Li community has been published. Therefore, students have a lots of reading resources to study in this section.

3. Field trips: Besides studying materials related to the community, students also managing their trips to the community to investigate, interview, sightsee, record, and take pictures of the community. By contacting the community in real life, students acquired not only information, but also sensation of the community.

4. Group work: Students were divided into 6 groups. They first decided the content topics of their materials, the target users of their materials, how their materials should be used, and how their final products should be like. Students then move on to collecting materials, organizing materials, and editing the selected materials.

5. Authoring products and mutual evaluation: Students put all their materials and authorized them together with Renp'y and come out with a final product. Final presentation of their group works and mutual evaluation Draw a period for this course.

The course finally come out with a product each group. The forms of students' products included creative reading novel based on the community history and culture, community tour guide, or a mixed of both. Content topics include attractions introduction, ancestral hall reviews,

geographical environment introduction, and sinofication history. Below are some screenshots of students' products:

Figure 2. Cover page of a group product created with Renp'y engine

Figure 3. A created story paragraph based on Xiao-Li's buried history.

Figure 4. A image map that allowed the users to browse around each location of the community

Figure 5. Tour-guide that explain the cultural environment of the community

After the final presentation, mutual evaluation, and focus group discussion, some results were found below:

1. Life Cherishing: Life after interviewing with aged immigrants from China, students excavated the stories of many war veterans, and these inspired students to cherish more on their own lives.
2. Professional respect: Seeing that students from different departments exercising their learned professions to help people or the community made my students sense the changes they can made through their efforts. This also inspired their respect to each other's profession.
3. Cultural sensibility: After the studying and field tripping to the community, students sense that even a looked normal ornament or scene might carry a rich culture content. This inspire them that culture need to be maintained and known so that people will enjoy and cherish the living environment that they live in.
4. Environmental sensibility: After the studying and field tripping to the community, students sense that through designing and maintaining of the living environment, the community can be much more Suitable for living.
5. Historical exploration: The community history includes an intentionally buried history of sinofication of an indigenous people [7]. This is a common phenomenon in Taiwan. This inspire students to dig more on their own history besides what the official claimed.
6. Educational outcomes: Students are happy to know how to use the authoring tool to create their digital tour guides or visual novels. Most of them said they are willing to create their own visual novel outside the class.

Besides the points mentioned above, in order to achieve better results, the course was refined the next year and is still an ongoing process. The changes of the course are described below:

1. Course extended to a two-semester course: One semester is too short for students to do so many things. and some students complain that they can do better job if the course extended. For this reason, the course pended the next year was extended into a two semester course with 3 credits at the first semester and 1 credit at the second semester. The first semester places more focus on studying the materials and community. The second semester will leave students to work along and the class time will only serve as consulting time and schedule check for the students.
2. Video-on-demand: Some students are interested in advanced coding in order to design more versatile functions for their products. Thus a flip classroom idea was introduced into the course the next year by preparing more video-on-demand movies of coding instruction for Renp'y so that students can choose what they need to improve their products.

III. CONCLUSION

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