Recasting College English Course into a SPOCunder Knowles' Andragogy Theory-----a Pilot Study in Wenzhou University

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Abstract: The 21stcenturyhas seen unprecedentedbreakthroughs in technology which have significantly changed the ways and effectiveness of teaching and learning. Higher education is already in the early stage of a revolutionary transition which calls for the creation of a new Adaptive Learning System to promote active learning by students. In china, College English course is undergoing significant reform towards English for Liberal Education (ELE), EnglishforProfessionalPurposes(EPP), English for Special Purpose (ESP) and English for Academic Purpose(EAP). In Wenzhou University, ESP has been carried out since 2009 and the test result shows that students'English proficiency has been improved. However, a survey for graduates carried out in Wenzhou University indicates that a good number of graduates declare that their Englishare incompetent for their profession.To improve the efficiency of ESP teaching,the research group,based on Knowles' Andragogy Theory, starts to recast one of itsESP course "Environmental English"into a "SPOC+Tradition Education" format. The purpose of the experiment is toimprove students' performance and work-related abilities through active learning. The approach has two steps. The first step is to construct a SPOC platform and remaster thecourse with the help of transdisciplinary professors, industry experts and information technology experts. The second step is to spread the new concept of SPOC for the on-site course learning among the lecturers, administrators and students as well as to undertake practical training for them. Altogether, 119 students of first–year bachelor majored in Environmental Science in Wenzhou University have taken part in this pilot study. The result of the questionnaire surveyshows that the majority of the subjects is satisfied with the remastered course teaching, and believes that the new format of learning can inspire their learning interests, improve their learning strategy and help them adapt to collaborative learning model.

Keywords: College English reform; SPOC; Knowles' Andragogy Theory; active-learning; pilot study; questionnaire survey

Introduction

Since the end of 20th century, China has embarked on a policy of rapid expansion in higher education, and theconcept of "University of Applied Science" was put forward with the adjustment of industry structure national wide (Tan, 2013).The development of "University of Applied Science" was in line with the national strategy to create abetter trained workforce. In Feb. 2014, Premier Li

Keqiang at the State Council requiresto guide a group of local universities to transform into university of applied science in theState Council executive meeting.The reform policy for local Universities and the fast changing world challenge the University to reconsider new forms of learning, new technologies for teaching andnew requirements for graduate competence.Educators are challenged to design new learning environments and curriculum that can really encourage students' motivation and facilitate students' active learning. More important, educators need to ask if the skills imparted are really transferable to the workplace (Tan, 2013).

The first wave of College English reform in China started decade ago. Until now, the English proficiency of college students has generally improved. In this situation, General English Course designed for improving students basic language skills is no longer necessary (Cai,2010; Wang,2010; Shi,2011; Zhang, 2011). Zhao Qinghong, Lei lei& Zhang mei (2009) have carried out a survey on students English learning interests among 2283 freshmen and sophomores in 12 universities, the result shows that 34.8% students have no interest in English learning. A survey made by Yu Liming & Yuan Duping (2005) shows that the major obstacles students met in college English learning are lack of goals, interest and pressure in learning. General English Course can no longer satisfy different majors and employers' requirements on using English to do academic research and work. The British Culture Committee had carried out a wide range survey named "English 2000" in the end of last century, the result of which shows that nearly 90% experts believe that English teaching in the 21st century should be combined with other disciplines rather than English as a language (Liu, 1996). The distinguish feature of language learning is leaning by doing, thus, using English to deliver knowledge of other discipline is the best choice (Shu, 2012).

Universities should scientifically determine the target of English teaching according to the standards of talents cultivating in each university and theactual needs of students'future jobs. As for the local universities, the English teaching objectives should be English proficiency + expertise = English capabilities to attend professional activities and international exchanges (Shu, 2012). According to this goal, for the majority of local Universities, college English teaching should be to train students in reading and writing, while special attention should be paid to students' ability to use English in professional fields.Only by combining English skills and expertise in College English teaching, will it stimulate learners' interest and motivation to improve learning efficiency (zhang, 2012). Wenzhou University has chosen ESP since 2010. ESP is the continuation or expansion of basis English teaching,which aims to further develop students' practical language abilities based on general Englishteaching when students language knowledge and skills have developed to a certain stage(Cai, 2004). ESP teaching objectives and teaching content are determined by learner's pragmatic language capabilities or actual use of English rather than general education (English as a discipline)(Strevens, 1977). ESP aims to train students to use English when carry out their professional work,which meets the needs for the compound talentsunder the economic globalization background.

A survey(2013) for graduates carried out in Wenzhou University indicates that a good number

of graduates declare that their English are incompetent for their profession. To improve the efficiency of ESP teaching, it is suggestedthat Knowles' Andragogybe applied to ESP teaching combined with updated ICT (Information Communication Technology) to put forward a new format of education the"SPOC+Tradition Education".

I. Brief IntroductionofKnowles' Andragogy

Malcolm SherperdKnowles (1913 ~ 1997)is a famous Americanadulteducators. In 1967, he proposed the concept of"Andragogy".In 1996,Knowleswascalled "adult education evangelist" by U.S. adulteducation. Knowles' in-depthstudy and explorationon adulteducation ledtheinterdisciplinarybecome an importantpart of thenational education.

Knowles' andragogy theory is based onfourassumptions which guidealladulteducation activities:

1. Adults' "self-directedness" Concept

Andragogy assumes thatwhena person grows up, his self-conceptmoves from one of total dependency toone of increasing self-directedness.An adulthas a deep psychological need to be perceivedas being self-directing. Any experience that they perceive as putting them in the position of beingtreated as children bound to trigger their resentment and resistance.(Knowles,1973)In order to realize adults' self-directedness, adultlearnershave to developself-learning abilities, such as learn to makeplans, observe, read, memory, and take notes in an effective way etc.

2. Adults' experience

This assumption is that as an individual matures he accumulates an expanding reservoir of experience that causes him to become an increasingly rich resource for learning, and at the same time provides himwith a broadening base to whichto relate new learnings. Andragogues convey theirrespect for people by making use of their experience as a resource forlearning(ibid).Adultsshowdiversified andpersonalizedfeatures oneducational background,living environment,learning styles, hobbies and interests etc., so they have largeheterogeneity in learning. Accordingly, the teaching methodology such as discussion, E-learning, simulation, team project, seminar, andother action-learning techniques can be adoptto better tap adult learners experience in learning.

3. Adults' "readiness to learn"

Andragogy assumes that adult learners are ready to learn thosethings they "need" to because of the developmental phases they are approaching in their roles as workers, spouses, parents, organizationalmembers and leaders, leisure time users, and the like.Thus, to time learning experiences to coincide with the learners' developmental tasksis important(ibid).The changing tasks bring new learningopportunities, thus it is advisable to create or simulate roles through practically meaningful tasks for adult learners.

4. Adults' "problem-centered" learning orientation

This assumption is that adults want to apply tomorrow what they learn today, so their time perspective is one of immediacy of application. Therefore, they enter into education with a problem-centered orientation to learning.Theywould see as much more relevant a curriculum that is organized aroundthe problem areas with which their work deals(ibid).Thus, it is advised that the curriculum be organized around problem-centered which can highly stimulate students' spirit in learning which has already been proved by Knowles' experiment in Boston University(ibid).

II. Application ofKnowles'Andragogy Theory toCollege English SPOC

In Wenzhou University, ESP has been combined with different disciplines to meet students' future professional requirements in English. Thus, the curriculum concentrates on skill and field experience related English ability which requires problem-centered units rather than subject-centered.Knowles' Andragogy Theory can well be applied in ESP college English reform.

What type of new education format can be adopted for the reform? Recently, higher education demonstrates new fundamental characteristics as accessibility and creativity. With the rapid progress in information technologies, MOOC (Massive Open Online Course) have opened a massive door in terms of online learning and making high quality education free for all and open to the masses. The initial success of MOOCs is in the US, especially the impressive scale of student enrollment in the MOOC courses offered by elite schools such as Stanford and MIT. In China, top universities such as Peking University and Tsinghua University have put MOOC into action.Despite the fast growth of MOOC resources and infrastructure, accessibility of MOOC has not yet gained enough attention in China. This is because major MOOC providers, including universities and online platform vendors, are still busy with infrastructure development and MOOC course building, and have put accessibility aside(Wu Wenjun, Hu Chunming, &Zhang Kenny, 2013).As Rodriquez (2011) declared, however powerful MOOC is, one of its major problems is that MOOC cannot correct the critical thinking work so that the students registered never have the opportunity to write papers or reports to have in-depth discussion with the professors. Another problem is that although face-to-face discussions between instructors and learners, integrated with on-line course contents, are developing in its initial stage, the effective combination of MOOC with the on-site course has no feasible and efficient way by far.

Taking advantage of the flexible educational process of MOOC, University of California -Berkeley Professor Armando Fox first coined the word APOC in 2013 to refer to a localized instance of a MOOC course that was in use in a business-to-business context. SPOCs support blended learning or flipped classroom learning, a current trend in education, which combines online resources and technology with the personal engagement between faculty and students that in-classroom teaching provides.(Wekipedia).Harvard University announced incorporating SPOCs into its curriculum in the fall of 2013.Universitécatholique de Louvain has already proved a

successful trier in implementing SPOCs with the course LFSAB1402 Informatics 2, a second-year bachelor university-level programming course taught to all engineering students (Combéfis, S., Bibal, Adrien., & Roy, P. V. , 2014).

Based on Knowles' four assumptions and the experience in Louvain, one of the ESP course "Environmental English"in Wenzhou University is under recasting in to SPOCtopromote the formation ofstudents'self-learning ability and individualized learningstrategies. The basic principles are as follows:

1. Adults' "self-directedness" Concept requires for self-learning abilities and a good command of self-learning process. Watson (1960-1961) declares that people learn best that which they participate in selecting and planning themselves. In the SPOC platform, all the adult learners and lecturers are involved in the selection of practical themes for each unit and all the pre-questions and post-questions are posed after in-depth discussion.In this platform, students can learn on their own steps and practice learning strategies such as reading, discussion, taking notes etc.

2. Adults' experience emphasizes the precious value of adults' experiences, as Watson (1960-1961) claimed how "ready" we are to learn is contingent upon adequate existing experience to permit the new to be learned.This will be fully realized in the reformed way of learning.Firstly, the themes in SPOC are selected from real work or everyday life, which can activatestudents' previous passive learning experiences; secondly, there are abundant of learning materials in the platform for studentsto select and learn based on their special experience; third, students can choose tasks and the way to present them which are closer to their previous experience.

3. Adults' "readiness to learnorientation points out adults' learn better when their social responsibilities and obligations change.How "ready" we are to learn is contingent upon adequate significance and relevance for the learner to engage inlearning activity. The best time to learn anything is when whatever is to be learned isimmediately useful to us(Watson, 1960-1961)In the"SPOC+Tradition Education" format, lecturers explain the purpose of tasks and use role plays, simulation etc. to embody real life or work situation to make in-the-spot experience which can inspire adult learners' motivation to learn.

4.Adults' "problem-centered" learning orientation declares that the problems/tasks assigned should be life-oriented and practical. Rogers(1969)points out that the facilitator helps to elicit and clarify the purposes of the individuals in the class as well as the more general purposes of thegroup.In the reformed format, theme related questions or practical problems are discussed and posed in and after class, students are asked to discuss in the discussion forum and present their tasks in various ways.

The recasted coursewas given in the second semester of the 2013-2014 academic years at School of Foreign Language in WZU. Two steps have been taken for the pilot study: a SPOC platform has been built with the uploading of the recast self-designed teaching material "Environmental English"; Lecturers and students have been trained to use the SPOC and

encouraged to try the new way of teaching and learning.

III. The Construction of College English SPOC

SPOCs can include video lectures, assessments (usually with instant feedback), interactive labs (usually with instant feedback), and discussion forums used in MOOCs (Wikipedia). Based on the basic models of MOOCs, the SPOC constructed in Wenzhou University is composed of six modules (see Fig.1):
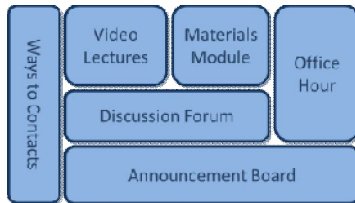

Fig1: six modules of SPOC

a. Videos Lectures: the videos are downloaded from the existing theme related resources such as the MOOC, youtube etc. Multiple choices, numerical answers and short answers can be imbedded in the videos or after video shows to attract students' attention andbetter students' understanding of the videos.The benefits of Video lectures are proved by Deslauriers, Schelew and Wieman(2011)who reportedthat active learning-based study improved learning by around 30% higher in students' attendance, engagement and learning compared with traditional lecture-based learning.(Figure 1)Meanwhile, Notes-taking board will be inserted below the video window to facilitate students' learning.
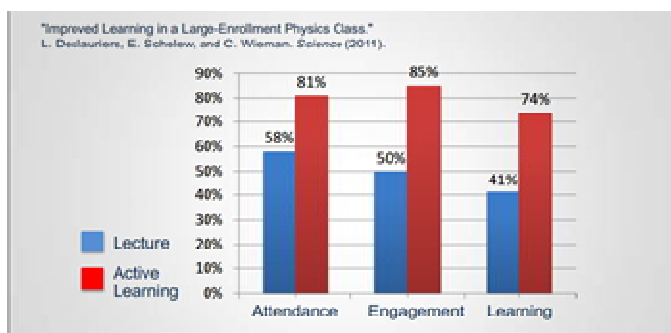

Figure 2: Improved Learning in a Large-Enrollment Physics Class（2011）

b. Materials Module: Lecturers as well as the students have the right and duty to contribute and complete the teaching materials which will be uploaded after expert's review. The materials should be real life –based, either be web links, electric books or articles, students' own works as ppt, reports, articles, videos etc."… learning is not merely through language，but with language"（Mohan，1986:

iii)Teachers should endeavor to organize and make easily available the widestpossible range of resources for learning(Rogers, 1969).

c. Discussion forum: the forum is organized according to different theme relatedquestions (pre-lesson questions, post-lesson questions). For example, if the lecturer gives 5 pre-questions to different students groups, the discussion forum will set 5 rooms, each students can choose different rooms in their favor to share opinions. Usually, a theme discussion lasts two weeks, after the deadline, the discussion forum will announce another new theme for discussion. As Houle (1972) declared, any design of education can best be understood as a complex of interacting elements, not as a sequence of events. In the discussion forum, students can raise any theme related questions, make statements, give suggestions and make comments.

d. Office-hour: in this virtual office–hour room, students can make an appointment once every 2weeks with lecturers to have a video session or use Skype to exchange ideas, solve puzzles or ask for help. Lecturers can also make time schedule to "meet" students to give instruction and check their progress.

e. Announcement board: Mainly each week, there will be messages published on the announcement board about theme related online reading lists or activities that will be organized after class.In this way, students can be monitored in making study plans.

f. Contacts: ways to contact lecturers or teaching assistants such as e-mail, Skype,qq etc. are provided here for students to contact lecturers in a private way.

SPOC can provide learner flexibility and convenience, but how to provide a balance between flexible learning options and the high touch human interactive experience?It is known that many learners prefer the convenience offered by a distributed environment; meanwhile, they do not want to sacrifice the social interaction and human touch as in a face-to-face classroom. To better solve this problem, a new format of education "SPOC+Tradition Education" is applied. The updating pedagogy used in the new format of education is flipped classroom, with the belief that active learning approach can inspire the passion of learning. Students, through interaction with one another and share "ideas, hunches, queries…in the hope that these interactions will trigger other insights" since "knowledge is social in nature and constructed through a process of collaboration, interaction and communication among learners in social settings" (DeWaard et al., 2011). In this type of classroom, students play an important role in presenting their learning outcomes such as seminars, presentation, speeches, role play and short video shows which are recorded before class. Lecturers play roles as facilitator, organizer, inspiration, learning partner and coordinator.

IV. Structure and Timeline of the Course

The developed SPOC is based on a newly set course named "English in environmental protection" which is realized by transdisciplinary cooperation between English lectures group and

professors from environmental protection department. The course is taught to 119 second-year bachelors in Environmental Science in 2013. To integrate the SPOC with the newly set course, the first step is to split the course material in two tracks: one is realized by SPOC, the other is taught with a traditional course. The SPOC track contains the basic information of the course and the updated materials downloaded from theme related MOOCs or Youtube like on line resources. Meanwhile, the traditional course brings advanced concepts and gives students opportunities to present their learning outcomes.

Houle (1972)once identifiesthe task of the educator to manage which include design a suitable format:

a. Learning resources are selected.

b. A leader or group of leaders is chosen.

c. Methods are selected and used.

d A time schedule is made.

e. A sequence of events is devised.

f. Social reinforcement of learning is provided.

g. The nature of each individual learner is taken into account.

h. Roles and relationships are made clear.

i. Criteria for evaluating progress are identified.

j. The design is made clear to all concerned.

Based on Houle's format, the course is split into cycles that follow the same pattern (see Figure 1). A cycle presents a week's schedule, and the course lasts 16 weeks. What's more, to each cycle corresponds one SPOC lesson.

Fri Sat Sun	Mon/Wed	Tue/Thu
SPOC	Lecture	Exercise
Discussion forum	Professor/lecturer	Teaching assistants

Fig.3Organization of a week for the remastered course

The first part of the cycle is the SPOC. Firstly, the students have to study the materials in SPOC and finish the selected pre-question raised by lecturers before class. This PBL aims to provide acquisition of information based on facts. Thus,all the problems are chosen out of the real world. Students can present their problem solving results in any suitable style such as PPT, video show etc. The SPOC track is implemented with the Instrucutre Canvas; it consists of videos presenting the basic concepts, updated information and exercises of various kinds which can be downloaded from the existing web resources such as the MOOCs and youtube or the lecturers can create their own videos. All the videos are modulated into short units such as 5-10 minutes. Exercises are interleaved with videos, which can be proposed in or after each video or groups of videos. Exercises can be

classical multiple choices or short questions.

After finishing working on the SPOC track, students have to attend an hour and a half lecture. The lecture is split in two parts. The first part is students' presentation time where students present their cooperation results of the pre-question selected before class. Each presentation has the time limit of around 5 minutes which can be realized in different types such as video show, PPT, debate, role play or speech depending on the content of their work. Eachgroup's presentation is followed by another group's comments according to the preset evaluation criterion. The teacher plays a role as organizer and facilitator to push forward the presentation part. Teaching mentors fulfill this role by monitoring discussions, asking questions, helping the resolution of occasional conflicts, enabling the participation of each group member to classroom discussions, giving examples when required, preventing scatter of discussions and making evaluations (Duffy & Cunningham, 1996; Rhem, 1998; Greenwald, 2000; Posner &Rudnitsky, 2001). In this way, teachers play an important role in helping to make globally distributedmaterials culturally relevant and meaningful.The second part is dedicated to present advanced or key concepts and explain the difficult points on the SPOC track.

Finally, the last activity of the one week cycle is an hour and a half exercise session. In the first class, students are supervised by lecturer or teaching assistants to make sure they have understood the theoretical aspects on the SPOC and some common mistakes of the SPOC exercises are explained. In the second class, students receive supplemental on-paper or oral exercises covering the basic language skills such as translation, listening and reading. Or, they will be asked to write an in-class report or short article on the theme after a week's study including SPOC and class presentation. After finishing the one week cycle, post-class questions are raised for students' further study on the theme.(See Fig.4)
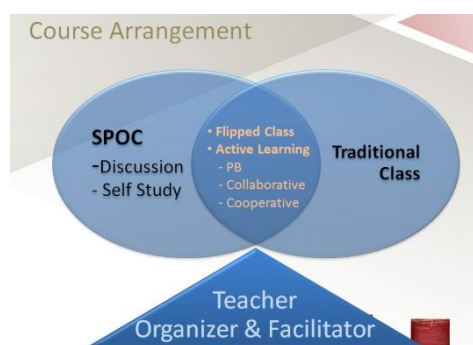

Fig.4 the Andragogy of "SPOC+Tradition Education" Format

It is important to change students' and lecturers' traditional concepts on teaching and learningand adapt to an active leaning approach following the flipped classroom pedagogical model. Thus, in the first week of the semester, introduction lectures are given to the all the students and teachers involved. The purpose is to introduce the organization, function and evaluation of the new pedagogy

model, and to explain the structure and syllabus of the new format.

The evaluation of the remastered course contains two parts. The first part is SPOC evaluation which counts a small part because it's difficult to verify students' performance on line. Besides, since it's a brand new learning concept and experience for students and teachers as well, a higher proportion in the final score may cause nervous and inner resistance. The second part is the evaluation of traditional course which includes in-class group presentation and papers or reports that followed a midterm exam and a final exam.

V. Technological and social integration

The successful implementation of the remastered course needs the co-development in technical aspect and the social aspect as well. (Combéfis et al., 2014) Firstly, since the technics in E-learning is quite mature, experts can easily succeed in providing exercises that can be assessed automatically and give student feedback instantly. We use the Instrucutre Canvas to satisfy both requirements.Instrucutre Canvas is an online learning management platform that can automatically grade programs while providing intelligent and relevant feedback. Secondly, social aspect is an essential part of SPOC development. For one thing, the new concept of active learning by SPOC should be spread and rooted among lecturers, administrative staff and students. For another, to build the SPOC, a group of lecturers and technical experts are organized to in charge of selecting or creating videos and the corresponding exercise for SPOC. The tools needed are a webcam, a good-quality microphone and Camstudio software. Thirdly, two teachingassistants are needed to animate the discussion forum, to oversee and clarify the discussion.

Meanwhile, to approve students' engagement in using the recorded material properly to ensure a correct and responsible active learning process, Pinvox-- "Personal Identification Number by Voice"(Vox in Latin) is applied. It is a prototype algorithm that aims to guarantee that scholars have followed, i.e., listened to and watched a complete recorded lecture with the option of earning a certificate or diploma of completion after attending courses virtually. It aims to providing a way to be able to tell whether someone watched a video completely or listened to a whole audio file. Canessaand and Logofatu (2013)reported that the student's engagement becomes higher since he/she gets more and more involved with the self-study as the embedded Pinvox sequences capture their attention.These benefits are coupled to those in the flexibility of study and in the increase of student's responsibility.

Since the new active learning in SPOC needs cooperation from all aspects of school or university in this case, the people involved should collaborate closely and frequently to be in charge of the feedback about the current situation and coordinate all elements involved.

VI. Evaluation of the Remastered Environmental English Course

The construction of the remastered course is still under the way of perfection after its prototype being finished by the end of fall 2013. Thus, only one batch of students majored in Environmental Science has been taken part in the "SPOC+Tradition Education" format learning. The data-based evaluation of the remastered course will not be complete until the first batch of students completely adapt to the SPOC model which will take at least one year. However, we have made a questionnaire survey to 119 subjects majored in Environmental Science in Wenzhou University to learn about their attitudes towards the SPOC model and its impact on them.

The "SPOC+Tradition Education" format combines different forms of active learning including collaborative learning, cooperative learning, and problem-based learning (PBL)throughengaging students into all types of activities such as group discussions, problem solving, role plays andSimulation games. The benefits to using such activities are many.As the Center for Teaching and Learning in the University of Minnesota pointed out that the benefits include improved critical thinking skills, increased retention and transfer of new information, increased motivation, and improved interpersonal skills. Michael Prince (2004) also declared thatactive learning enhances academicachievement, produces positivestudent attitudes,improves the long-term retention, better study habits,and develop enhanced critical thinkingand problem-solving skills. To find out the active learningresult of The "SPOC+Tradition Education" format, a questionnaire was made based on the above mentioned elements of active learning which include learning retention, learning motivation, critical thinking, problem-solving skills, better learning habits, Interpersonal skills and Creative thinking (See table 2).

Table 2: Active-learningSatisfaction Questionnaire (N=119)

Questions	Completely satisfied	Mostly satisfied	Neither Satisfiednor Dissatisfied	Mostly Dissatisfied	Completely Dissatisfied
Leaning retention	21%	49%	30%	0	0
Learning motivation	11%	50%	38%	1%	0
Critical thinking	13%	39%	47%	1%	0
problem-solving skills	6%	44%	48%	2%	0
Better learning habits	9%	43%	45%	3%	0
Interpersonal skills	12%	43%	44%	1%	0
Creativethinking	16%	52%	31%	1%	0

Note. Measured on a five-point scale with response categories ranging from (1) completely dissatisfied to (5) completely satisfied. (** $p < .01$.)

A very small portion (less than 3%)reported that they are dissatisfied with the result of active-learning in the new format of education. This finding isconsistent with Bonwell and Eison (1991) who conclude that active learning leads to better student attitudes and improvements in students' thinking and writing.Felderet al. (2000) include active learning on their recommendations forteaching methods that work. OrhanAkınoğlu and RuhanÖzkardeşTandoğan (2007)pointed out that by means of PBL (one form of active learning adopted in the new format of education), some attitudes of students in relation to such areas as problem-solving, thinking, group works, communication, information acquisition and information sharing with others are affected positively.

The highest proportion (around 50%) reported that the new format of education helps enhance their learning retention, motivation and creative thinking. This result is consistent withFredericksen,E. (1998) &Berry Jr., L. (1991) who suggest that collaboration (one form of active learning) isparticularly effective for improving retention of traditionally underrepresented groups. Gehringer& Miller (2009) declare that students who engage in active learning activities are more attentive during class.

In general, students are satisfied with the new SPOC model in improving their active-learning ability. For the open question part, students listed their difficulties in "SPOC+Tradition Education" learning, among which cooperation in tasks comes the first. The possible explanation is that firstly, the traditional Chinese way of learning encourages solo study since primary school, thus, it takes time for students to learn to cooperate in collaborative learning; secondly, students live in the digital world lack interpersonal skills, thus, it takes efforts to learn to make compromise and distribute individual tasks among group members.Lecturers have put more effort into helping and guiding students to build the sense of co-study and to process interpersonal skills. Besides, students also mentioned that they have difficulty in processing and digesting the huge information input during the class presentation and the massive material in the SPOC. On the one hand, this reflects the innovated mode of delivering curriculum has a challenging higher requirement on students' learning strategies and leaning habits as well; on the other hand, the new format of education has a higher requirement on teachers' classroom management ability and curriculum design foresight.

VII. Conclusion

The new "SPOC+Tradition Education" learningformatbased onKnowles' Andragogy Theory combines different forms of active learning including collaborative learning, cooperative learning, and problem-based learning (PBL)has shown its advantages in the pilot study. From the survey, we can conclude that the new format of education helps enhancestudents'learning retention, motivation and creative thinking in a positive way.It is observed that students taking the remastered course show the passion that has been buried for ages in traditional way of teaching; besides, they reported that they have improved problem-solving skills, transferable workplace experience, better

communication skills, improved leadership ability and critical thinking ability as well. Although a great number of the students reveal their weakness and worries in interpersonal relationship, cooperative learning, and proper learning strategies, and the teachers complain about the higher requirements on class management ability and enormous time spent in curriculum design, it is an essential stage of education reform to prepare students' adaptability in fast-changing environments.

The perfection of the SPOC from an existing course is time and energy costly; however, the experiment can be taken as a trying step in taking advantages of streaming technologies to create a mixed mode of delivering curriculum for the benefits of the students, teachers and universities.

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