

Positive Character in Academic Information Literacy Education: 2 Years Action Research

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Abstract—The purpose of this paper is to find an effective solution to this problem of finding the information needed. The action research was conducted from two routes, one was individual face to face research consulting, the other was information literacy courses or workshops. Nearly 900 university students and teachers participated in this research. From 2016 to 2017, the researcher designed several rounds of action plans, which included four stages, including 10 courses (or workshops) and more than 30 individual counseling. The researcher added different character strengths elements during the first three stages. The fourth stage was a comprehensive validation phase. This research constructs an information literacy teaching approach, whose core purpose is developing the judgment. It is based on task-based learning, different group students needing to solve diverse problems to complete the task. There are 4 main modules: target module, clustering module, associating module and planning module. The teaching approach enables individuals to follow the path retrieval behavior and apply retrieval knowledge flexibly. It has a significant effect on finding research topics. However, this approach is more suitable for small classes. The research proposes a teaching technique of teaching academic information literacy and supporting readers' skills development to achieve academic success. In the new digital age, acquiring the information literacy and being well educated people should complement each other. The approach hopes to cultivate educated people, which is essential for society development.

Keywords—moral reasoning, pedagogy, critical thinking, information literacy, academic libraries

I. INTRODUCTION

Information literacy is a set of abilities requiring individuals to "recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information" [1]. The academic information literacy education is teaching the information literacy skills used for academic purposes, such as research papers and group presentations. It is based on the information resources available for learning and problem solving throughout people's lifetimes--to learning experiences that build a

lifelong habit of library use. Such a restructuring of the learning process will not only enhance the critical thinking skills of students but will also empower them for lifelong learning and the effective performance of professional and civic responsibilities [2]. What kind of teaching method can improve critical thinking? Researchers have done lots of tries incorporating critical thinking into an information literacy module for an introduction [3-9]. Problem-based learning (PBL) is a student-centered pedagogy in which students learn about a subject through the experience of solving an open-ended problem. The goals of PBL are to help students develop flexible knowledge, effective problem solving skills, self-directed learning, effective collaboration skills and intrinsic motivation [10]. But how to make an effective problem in information literacy education? Character strengths and academic achievements have a positive correlation [11,12]. As predicted by social interdependence theory, results indicate that higher achievement and more positive peer relationships were associated with cooperative rather than competitive or individualistic goal structures [13]. While, will it be more effective if the academic information literacy education integrated with positive character? Peterson and Seligman have focused specifically on positive dispositions. The Values in Action (VIA) Classification of Character Strengths was created to measure 24 positive characteristics [14]: appreciation of beauty, authenticity, bravery, creativity, curiosity, fairness, forgiveness, gratitude, hope, humor, kindness, leadership, capacity for love, love of learning, modesty, open-mindedness, persistence, perspective, prudence, self-regulation, social intelligence, spirituality, teamwork, and zest. The research question is what kind of teaching design helps enhance students' academic information literacy?

II. METHOD

A. Participants

478 students and 13 teachers from Northeast Normal University and over 400 students and teachers from other different China universities participated in this study. They were mainly from schools of art, music, education, psychology, English, economics, information technology, history and PE. 462 students and teachers attended Northeast Normal University information literacy classroom

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Fund Project: the research for this paper was financially supported by the Northeast Normal University, Grant No. 1409035.

instructions; 16 students and 13 teachers participated in one-on-one information counseling. Meanwhile, more than 400 students and teachers, from different universities in China from different research areas, attended the online course.

TABLE I. Participants in classroom instruction and counseling

Round	Classroom Instruction Participants (Courses, Lectures)	Information Counseling Participants
Round 1 2016.3-2016.7	66 (2,8)	12
Round 2 2016.9-2017.1	562+ (3,17)	5
Round 3 2017.3-2017.7	122(3,6)	8
Round 4 2017.9-2018.1	112(3,14)	4

B. Procedure

From 2016 to 2017, four rounds of action research conducted, each with classroom instruction and information counseling. The former included 11 embedded information literacy courses or workshops, up to 61.5 hours in total; while the latter consisted of 42 information counseling for 29 researchers, up to 80 hours in total. Embedded information literacy courses are embedded in numerous major courses at different schools, taking 2-4 lectures within the major courses. They were designed to help students to achieve research-related information retrieval. The workshops were aimed at a similar goal. The information counseling, usually on an one-to-one base, mainly consisted in providing answers to a wide range of research-related questions, from choosing a research topic, surveying funded research projects, developing a research plan, writing a thesis proposal and so on. It usually took around two hours each time.

This action research was designed on the basis of the needs of academic information on the part of Information counseling. The first three rounds of classroom instructions and counseling are designed to dig out more positive character elements and the fourth round to verify. The courses are designed on the basis of PBL, with the 24 positive character (Peterson & Seligman, 2004) consolidated. During different rounds of classroom instructions and counselings, the researcher seriously reflected on a previous round based on the participants' feedback, and revised both the courses and counseling in the round that immediately follows. Both classroom instructions and counseling were scattered in different months. This enabled the researcher to have sufficient time to review the counseling process, summarize the needs of readers and reflect on problems that emerged in counseling, and develop solutions to these problems in classroom instructions that immediately follow.

The classroom instructions before 2016 were designed on the basis of PBL, with an orientation to facilitate students' critical thinking. At the beginning of the action research in 2014, the researcher reflected on PBL once

again, and invited more activities to help promote students' critical thinking. As I proceed, I gradually invited more positive characters into research information literacy education, and figured out ways of promoting students' information literacy on the basis of these positive characters.

Round 1: 2016.3-2016.6. Student tasks in class were transformed from answering questions about knowledge of information retrieval to answer questions about students' needs in information retrieval. Through this change, students are guided towards thinking critically about them, the information retrieving processes, and thus were encouraged to ask more questions.

Round 2: 2016.10-2017.1. I enriched students' group work, invited more discussion on course content and more reading which promotes thinking critically. Students were assigned more reading tasks than before, such as abstract reading, full-text reading. And I added the element of future-orientation, encouraging students to read about and think about what they are going to write in the future and further about their academic objectives.

Round 3: 2017.3-2017.6. While the first two rounds invited various group work to promote students' critical thinking, but emphasis was not put on the evaluation of their effects. Therefore, in this round, we put more emphasis on the monitoring of students group activities, and introduced more exercises of the association into the classroom instruction.

Round 4: 2017.10-2018.1. The two positive characters—spirituality and self-regulation—were introduced into the course. Although I have realized the importance of goal-setting in the second round, activities which were to guide students to set goals were relatively vague. Therefore, in this round, I helped students set their specific goal, namely reachable short-term goals based on their current learning situation, and specific steps to reach the goals.

III. RESULTS AND DISCUSSION

A. Building J-SPSst Approach

J-SPSst approach needs to explain the retrieving knowledge. Train the students' critical thinking, and achieve goals in a planned way. It is an effective teaching method of "letting students find out the information they need by themselves", which focuses on cultivating the ability of judgment, centers on the Spirituality, Perseverance, Self-Regulation, and is supplemented by Social Intelligence, teamwork and honesty etc. During the process of teaching, different groups of students need to solve different problems to complete the task. The teaching method has four main modules, namely Target module, which can make the object clear through asking the right questions, Associating module by looking for keywords, Clustering module by finding out the exact content through mind maps and the Planning module, which can complete the academic mission by developing flexible use search skills. Four teaching modules are grouped and applied according to the distinctive

teaching content.

TABLE II. MODIFIED EXAMPLE OF A TEACHING METHOD IN DIFFERENT STAGES

Teaching	Before 2016	2016.3-2016.6	2017.10-2018.1
	<i>Before Action Research</i>	<i>Round 1</i>	<i>Round 4</i>
PBL task	How to utilize e-book database?	How to locate the required e-Book?	How to clear the knowledge point?
Teaching process	Teacher: Explain each E-book database one by one. Group Practice: Finding the Book "Learning Vocabulary in Another Language"	Teacher: Explain the method to find the e-book, including e-book full-text database, book reviews, worldcat etc. Group Practice: Complete the unified task of "Among the works of Mo Yan, which has been translated into other languages?"	Group Activity: Discuss Solutions Teacher: explain professional retrieval knowledge, taking the search of a particular knowledge point as an example. Students practice: Find the knowledge that they do not know themselves. Sharing: when will this method be applied in the future Making plans

Table II is the example of major changes in the process of instructional design, which explains the same content, e-book database. The PBL task in the teaching method is operated by the first e-book database and then transforms into a variety of methods that can find out the required e-book, and finally transforms into the professional concept that the actual use of the book is to summarize. With the change of tasks, the teaching process is also greatly changed. The tasks before Action Research need to explain the full text of each e-book database, and each function of the database will be referred. In the first round tasks of action research, e-text database is just one method. There are still some additional e-book abstract databases, but they all center on books. In the fourth round, in order to solve the task, the book is not the only channel, but also by means of search engines, dissertations databases, which summarize many search skills. It does not mean that each function of an e-book database will be explained, only function that relates to the task. Since the requirements of students' operation and application-level have become increasingly demanding, the researchers need to be better prepared before the class. In the fourth round design "Sharing: when will this method be applied in the future" link, I actually hope the students can learn by analogy. They cannot only use this method when they want to understand the knowledge points, but also use it in some other situations.

B. Improving Criticle Thinking with Clustering Module and Associating Module

Analysis and problem-solving skills need to be

improved. On the one hand, analysis of the search results is not done critically—that is, students cannot cluster different research perspectives, analyze their relationship and get rid of extra information. On the other hand, they cannot combine and use what they have learned to solve different problems. One option is to use the clustering module to design and combine several tasks, and to strengthen the interpretation of the results presented. In the first round of action research, one counseling investigator focuses on communication with readers on search terms, but with the reader to find the search term, even if treatment is not found satisfactorily. Not the actual search terms, but the readers are not clear about what they want, which involves the understanding of the concept or mentioning a good question. Whether teachers and students have no specific research to help them be aware of current research before the unreasonable description is necessary, the program is designed to deal with a question module. By asking questions, the group can discuss ideas.

C. Purpose and Plan

Purpose and plan are extremely important parts in information literacy education. When the students are advised to clarify the concepts or certain knowledge, they always have reasons to prove that they do not have time to read the literature: I have to practice, hand in homework, prepare for exams and so on. Teachers generally reflected that students are lack of reading. "In fact, without reading literature, just searching is of no use, but the reality is that many students are not diligent." The solution is to enable students to make certain executable plans. In the fourth round of action, every student has to make a detailed plan for a single task. For example, the task is "to find research points of a specific meeting", and they have two weeks to complete it. The plan may be to find out a high-level international conference before Tuesday, and they need to make the mind map of the meeting theme on Wednesday. Find the papers of the main speaker on Thursday, read a reporter's papers before Sunday, and finish the reading papers of the second speaker before next Wednesday. The researchers should first ask the students to make a plan on their own. Then they should guide the students to refine their plans by means of asking them for some questions. First they should split the task requirements. The given time should be specified to the day, and they need to state the time spent each day. In the previous action, I found that it was hard to implement when they want to make a plan for larger tasks. So in the fourth round, I tried to make a plan for some small tasks, and it really made sense.

IV. CONCLUSION

J-SPS^{sth} focuses on cultivating the ability of judgment, centers on the Spirituality, Perseverance and Self-Regulation, and is supplemented by social intelligence, teamwork and honesty etc. It has four main modules, which are Target module, Clustering module, Associating module and Planning module. The teaching approach enables individuals to follow the path retrieval behavior and apply

retrieval knowledge flexibly. It has a significant effect on finding research topics. It is quite helpful in the sense that it helps achieve the requirements of the teachers and address students' questions of research information.

Positive character will promote information literacy education. Follow academic morality, ethics, information analysis, and do research steadfastly and insistently, for they all contain some positive characters. Arranging a variety of classroom activities, such as clustering module, the association module, target module, planning module also incorporates character education. I expect that students can improve good habits and sensible ways of thinking, which are useful for improving students' scientific literacy.

However, this approach is more suitable for small classes. The instructional design has higher requirements for instructors. In addition, because the participants were mainly from the social science, arts and humanities subjects, application to other disciplines may need more consideration.

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