Fostering Critical Thinking Disposition Through SRSD Model in the Foreign Language Classroom

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Abstract

Despite the studies on the effectiveness of SRSD model in improving language learners' self-regulated learning, there lacks a connection between SRSD model and the cultivation of critical thinking. This study explores the fostering of critical thinking disposition by means of adapting and adopting SRSD model in a foreign language learning context. A quasi-experiment design was employed and the experiment group received the training based on SRSD model and the control group receive the routine instruction. Findings revealed that learners' critical thinking disposition has been significantly improved in terms of the four components of critical thinking disposition, analyticity, self-confidence, inquisitiveness and cognitive maturity. Pedagogical implications are also discussed.

Key words: Critical thinking; SRSD; Self-regulated learning; L2 writing

1. INTRODUCTION

As to critical thinking (CT), there are various definitions which haven't reached an agreement. In many definitions, CT is considered as an array of skills related to one's conscious effort in making his own decisions as to what to believe or what to do by focusing on his attention on it (Ennis and Norris, 1989). Critical thinking skills refer to the ability to evaluate various sources of information, judge it usefulness and reliability and make decisions about what to believe and what to do. CT skills mainly involve the skills in metacognition, logically evaluating information sources, solving problems and selecting appropriate strategies or solutions (Ennis, 1987).

However, CT is not only a series of skills but also a kind of disposition. Disposition is related to recognizing the need of one particular skill as well as a willingness to make mental efforts to apply it (Halpern, 1997). In Delphi Report, Facione (1990) firstly added the affective dispositions into critical thinking and defined a good thinker as "habitually inquisitive, well-formed, trustful of reason, open-minded, flexible, air-minded in evaluation, willing to consider, diligent in seeking relevant information, reasonable in the selection of criteria, focused on inquiry" (Facione, 1990). CT has proven to be essential to students' development as it allows us to interpret information and decide whether it is reliable or not (Saad'e et al., 2012). In China, some scholars have pointed out the necessity of training Chinese students' CT since those students are in lack of required CT (Huang, 1998; Huang, 2010). Therefore, this study explored the efficient way of fostering CT with SRSD model in a China context.

2. LITERATURE REVIEW

2.1 Cultivation of CT in Foreign Language Classrooms

In foreign language learning, it is not realistic to predict language learners to be skillful in CT since they need to trained and guided to achieve this (Alnofaie, 2013). Therefore, there are various studies exploring effective ways to cultivate language learners' CT development.

One approach to CT cultivation is the Infusion Approach (Ennis, 1989) that underlines the explicit training of CT skills. Language learners engage in CT about their subject and the CT skills related to the subject are considered as one of the aims of language learning since CT skills are always needed to deal with the language content students are provided with. The advantage of this approach is that language learners have direct access to CT and this is a beneficial supplement for language learning.

Another widely adopted approach is content-based instruction (Tehrani & Razali, 2018) in which CT training is integrated with content learning. This approach is highly appreciated due to the authentic content offered in the relevant courses. In this approach, language is not only the tool to learn the content knowledge but also a bridge to practice CT skills.

Despite different approaches proven to be effective in enhancing students' CT, there lacks a connection between self-regulation and CT. In CT, many processes of assessment, adjustment and reflection are involved. Self-regulation overlaps with CT in terms of the previous processes. This study attempts to study the effect of self-regulation intervention on CT.

2.2 SRSD Model

Self-regulated Strategy Development (SRSD) is designed to deal with writing problems for language learners. The multiple goals of this instruction include helping students grasp the cognitive processes required in writing, promoting the development of learners' use of self-regulated writing strategies, increasing their stock of what good writing is like and increasing their self-efficacy for their writing and writing capabilities (Graham & Harris, 1996). There are six stages to follow and those stages are not linear but recursive, interactive and highly individualized. The first stage is to develop and activate background knowledge. During this stage, the teacher helps learners master the related knowledge as to good writing. The second stage is to discuss and describe the strategies necessary to be learned. The teacher and learners discuss the writing strategies and writing performance. The next stage is to model the strategies. The teacher shows how to use the strategies mentioned in the previous stage. And the fourth stage is to memorize the strategies. This stage is usually finished by the learners themselves and they memorize the strategies they have learned. Then it is to support the strategies. In this stage, the teacher and learners collaborate to use writing strategies to finish some specific writing tasks. The last stage is independent performance. The learners independently apply the strategies learned in the previous stages. SRSD model has proven to be effective in enhancing the writing of both the learners with and without learning abilities and this model is also a powerful tool to train learners' self-regulated learning strategies (Teng & Zhang, 2020), helping learner to be more self-regulated.

In this study, SRSD was adopted and adapted to be employed in the whole process of language learning instead of being confined to writing domain. In the first stage, the teacher developed and activated background knowledge related to English learning. During the second stage, the teacher and learners discussed and described the strategies involved in the whole learning process. In the next stage, the teacher acted as a model to display those strategies. The fourth stage was for learners to memorize those strategies. Next was teacher's scaffolding to support learners' use of strategies. The last stage was learners' independent performance.

3. METHODS

This study explored the effect of the application of SRSD model in writing in the foreign language classroom on the development of students' critical thinking. Two research questions guided this quasi-experiment:

RQ1: Did SRSD model have any impact on the development of the intervention group's critical thinking?

RQ2: If yes, how did the intervention group and the control group differ in their critical thinking after the intervention was over?

3.1 Participants

A convenient sampling was used to recruit the participants on a voluntary basis in this study. A total of 103 non-English sophomores in two intact classes agreed to join in and they were told their choice of participation or non-participation would not influence their scores in this subject. In the middle of study, they had right to choose to go on or withdraw from this research. During the study, all these students were enrolled in a required comprehensive English course and they have never received any instruction based on SRSD model.

The two classes of students were allocated to two conditions: an experiment group where SRSD model was adopted to enhance their self-regulated learning, especially self-evaluation, self-reflection and self-monitoring and a control group where SRSD model was not adopted and no similar training was carried out. The two classes were taught by the same teacher and the same textbooks and teaching approach were used except for the SRSD model training in the intervention group.

Table 1
Demographic information of the intervention group and control group

Groups	N	Nfemale (%)	Nmale (%)	Mean Age
Intervention	51	26 (50.1 %)	25 (49.9 %)	18.1 (*SD*=1.31)
Control	52	23 (44.2 %)	29 (45.8 %)	18.3 (*SD*=1.25)

3.2 Instruments

3.2.1 Critical Thinking

In this study, CT was assessed in a Chinese version of California Critical Thinking Dispositions Inventory

(CCTDI) (21). The Chinese version of CCTDI has been modified and validated by Peng (20). In total, there are 70 items testing seven categories of CT disposition, such as "truth seeking", "open-mindedness", "analyticity", "systematicity", "self-confidence," "inquisitiveness," and "cognitive maturity." The Cronbach's Alpha Score was 0.90 (Peng, 2004). This scale is a six-point Likert scale, and each item has six points ranging from one to six. According to Facione et al. (1994), higher scores in this scale indicate stronger CT disposition. Scale takers are regarded to have strongly positive attitude toward CT composition if their average score is 5 or more. Those who get average marks ranging from 4 to 5 are considered to have positive attitude toward CT composition. If they get 3 to 4 marks, it indicates they have negative attitude toward CT composition and marks below 3 imply strongly negative attitude toward CT composition.

3.2.2 Language Proficiency
Learner's foreign language proficiency was assessed in terms of CET. CET is a nation-wide test targeting evaluating English proficiency of non-English major in China. There are 2 bands: CET-4 and CET-6, both of which are usually taken by undergraduates. As a widely recognized test, CET has good validity and reliability. In this study, CET-4 is employed to test the participants' English proficiency.

In CET-4, different skills are tested, such as listening, writing, reading and speaking. Since the spoken test for CET is not taken together with written test for CET and not all students participating in written test always take spoken test as well, this study adopted the score in written test in CET to indicate the participants' English proficiency.

3.3 Procedures
The study lasted for 12 weeks in both control group and experiment group. At first, the participants' English proficiency and CT disposition are assessed as the pretest. Then in the experiment group, SRSD model was applied. Every four weeks were a unit for one particular skill in language. In each week, there was one hour's time for SRSD model training. In the first week, the instructor in the experiment group developed and activated learners' background knowledge and discussed the strategies. In the second week, the instructor modelled the use of those strategies. In the following week, learners spent time keeping those strategies in mind and the instructor offered necessary scaffolding to empower learners with the strategies. And in the last week, it was the time for learners to practice independently. Twelve weeks later, the participants' English proficiency and CT disposition were assessed as the pretest.

3.4 Data Analysis
The data collected in CCTDI and language proficiency were cleaned and subjected to statistical analysis to find whether significant differences arose between the two groups in the pre-test in terms of their language proficiency and CCTDI. Then t-tests were employed to examine whether the participants' language proficiency and CT had a significant increase in the intervention group.

4. RESULTS

4.1 Comparison of the Two Groups in the Pre-Test of CET-4 Scores and CT Disposition
The experiment group and the control group had very similar CET-4 scores and the average CET-4 scores in the experiment group and the control group are 496.2 (SD=9.25) and 493.8 (SD=8.89) , 3.2 and 3.1 respectively. Independent samples t-tests found no significant differences between the two groups in CET-4 scores (p=.91) and CT disposition (p=.69). The average CT disposition scores were 3.2 and 3.1 for the experiment group and control group respectively. The average scores for seven components of CT disposition in the experiment group and the control group were truth-seeking 3.2 and 3.3, open-mindedness 3.6 and 3.4, analyticity 3.5 and 3.3, systematicity 3.1 and 2.9, self-confidence 3.2 and 3.4, inquisitiveness 2.9 and 2.7 and cognitive maturity 3.1 and 3.2 respectively. Independent samples t-tests found no significant differences between the two groups in terms of the total average score of CT disposition and its seven components (p>.05).

4.2 Comparison of the Two Groups in the Post-Test of CET-4 Scores and CT Disposition
After the intervention process, there was an increase in CET-4 average scores and CT disposition average scores being 586.9 and532.9, 3.94 and 3.31 respectively for the experiment group and the control group. Independent samples t-tests found significant differences between the two groups in CET-4 score (p=.01) and CT disposition scores (p<.05). As to the seven components of CT disposition, the average scores of the experiment group and the control group in the post-test were truth-seeking 3.5 and 3.4, open-mindedness 3.7 and 3.6, analyticity 4.8 and 3.6, systematicity 3.3 and 3.1, self-confidence 4.7 and 3.5, inquisitiveness 3.0 and 3.1 and cognitive maturity 4.6 and 3.3 respectively. Independent samples t-tests found significant differences between the two groups in terms of the total average score of CT disposition and its four components: analyticity, self-confidence, inquisitiveness & cognitive maturity (p<.05).

5. DISCUSSIONS
This study revised a SRSD model designed to improve language learners' self-regulated learning and adapted it to foster their CT disposition in language learning. The results showed that the participants have made significant improvement in their CT disposition, especially in the four components of the seven ones in CT disposition,

analyticity, self-confidence, inquisitiveness, and cognitive maturity.

This study has confirmed that CT disposition is teachable in an EFL context in China. Although the importance of CT, especially CT disposition has been recognized in different cultural contexts, there hasn't been an agreement in the teachability of CT. CT is considered to be quite hard to learn for the learners in an EFL context where CT, regarded as a social practice, has been finished when they were children (Atkinson, 1997). And some researchers (Fox, 1994) underlined the effect of cultural context on the development of CT and argued L2 learners had a lot of difficulties in critical thinking since their cultural background might hold back their CT. Although in this study, not all CT components showed significant differences after the invention stage was over, there existed four components significantly improved in the participants of the experiment group, compared with those in the control group.

As to the ways of fostering CT, this study has proved the effectiveness of the revised SRSD model in the enhancement of CT development, especially in the development of CT disposition. Although SRSD is an efficient way of improving self-regulated learning, it is also effective in improving CT composition if properly adapted and administered. In CT, self-regulation is essential and improving self-regulated learning means the enhancement of CT to some degree.

6. CONCLUSIONS

This study has explored the ways to foster EFL learners' CT disposition in terms of improving their self-regulated learning through an adapted SRSD model. By adapting SRSD model to make it applicable in a foreign language learning context instead of just in a writing context, this study proved SRSD model to be an effective approach to fostering CT disposition.

In pedagogical field, this study offers several implications. For example, instructors may hold a belief that language learners in a foreign language context are also possible to be trained to improve their CT and a SRSD model can be adopted to deal with the issue of training students' CT. During the process of CT disposition training, the instructor need to pay much attention to the modifications of SRSD to make it proper in different learning contexts so that this model may facilitate students' CT disposition development.

However, there are also some limitations in this study. This study, focusing on the second-year student in one university, is a small-scale attempt to test the effectiveness of SRSD model in fostering CT disposition. The future study may include more students in different grades and extend the topic by exploring individual differences in the development of CT disposition. And this study is a quasi-experiment and highly quantitative and this kind of study

is advantageous in revealing the relationship yet proper in uncovering the process. In the future, the qualitative study may as well be employed to explore what is going on in the middle of CT disposition training by means of SRSD model so that a more thorough understanding of CT disposition training may be acquired.

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