
Research on Textbook Use in Competency-Based Teaching in high school in Taiwan

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Abstract

Textbooks have always been the primary basis for interaction between teachers and students in high school classroom in Taiwan. In 2018, Ministry of Education announced specific domain curriculum guidelines, emphasizing competency-based learning with ‘core competencies’ as the main axis of curriculum development. Core competencies refer to the knowledge, abilities, and attitudes that a person should possess to adapt to present life and face future challenges (Ministry of Education, 2014). Related research has revealed the importance of teachers in textbook usage (Hansen, 2018; Watt, 2015; Taylor, 2013). Textbooks, after all, are static teaching materials and can hardly cater to the individual needs of students in each class. Therefore, teachers must adjust the content and method of using textbooks to respond to student learning.

However, high schools in Taiwan have traditionally focused on teaching subject knowledge, and teacher-centered lecturing remains prevalent. With the widespread use of textbooks, how can the use of textbooks be transformed into competency-based teaching? Furthermore, I’m curious about the current state of high school teaching, two years after the curriculum guidelines were implemented. There is limited empirical research in this area, which could serve as a basis for further refinement and improvement of teaching in textbook use.

Therefore, this study investigates the teaching conditions of the five major subjects (Chinese, English, Mathematics, Social Studies, and Science), attempting to understand how teachers utilize textbooks to implementing competency-based teaching, which includes guiding students in active learning, inquiry into the learning process, and the demonstration of application transfer. The research questions include:

1. What is the performance of high school basic subject teachers in implementing competency-based teaching with textbooks use?
2. How do teachers of different subjects (Chinese, English, Mathematics, Social Studies, Science) implement competency-based teaching using textbooks at different times-before, during, and after teaching? Are there any differences?.
3. Are there differences in the performance of using textbooks for competency-based teaching among different school background variables (remote location, school size) and teacher background variables (subject, years of experience)?

This study first established principles for using textbooks to promote competency-based teaching, through expert interviews, expert reviews, and questionnaire pre-tests, extracting principles of ‘initiative’, ‘inquiry’, and ‘practice’ for textbook use. ‘Initiative’ towards arousing students’ intrinsic learning motivation and interest, ‘inquiry’ towards participation in

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the learning process, acquiring strategies through exploration or deep understanding, and 'practice' towards integrating and applying learned abilities to solve problems or transfer to different contexts. Subsequently, a questionnaire survey was conducted to explore the current use among Taiwanese high school teachers. The survey was conducted online, targeting 516 senior high schools, excluding those used in the pre-test, and randomly sampling 104 schools. The survey was conducted from May 6 to June 11, 2021. A total of 923 teacher questionnaires were collected. After excluding those from teachers outside the five major subjects, there were 675 valid questionnaires, resulting in a usability rate of 73.13%.

The findings are as follows:

1. Regarding competency-based textbook use, teachers prioritize 'initiative' over 'inquiry' and 'practice'. In 'practice', overall performance needs strengthening, indicating that when teachers use textbooks, they still tend to favor subject-oriented knowledge teaching. Although teachers can stimulate learning motivation, there is still a deficiency in guiding students in activities such as 'inquiry' and 'practice'.
2. Regarding the timing of textbook use, teachers are better at using textbooks for competency-based teaching 'post-teaching' and 'pre-teaching' stages than 'during teaching'. It indicates that the performance of the principles of textbook use 'during teaching' is lacking. This is related to the reduced teaching hours for compulsory courses in high school basic subjects, making competency-based teaching more challenging within limited time.
3. The situation of teachers using textbooks to guide 'inquiry learning' is highly correlated with overall competency teaching. Therefore, how to evoke an 'inquiry' process during the teaching process is key.
4. Teachers from schools with different geographic locations and sizes show no significant differences in the use of textbooks for implementing competency-based teaching. Teachers with different backgrounds, including administrators and informal educators, demonstrate relatively higher performance. Furthermore, the Chinese language subject excels in terms of inquiry-based utilization compared to other subjects.

Keywords: Competency, based teaching, textbook use, high school