

Original Paper

A Preliminary Study of Classroom Observation LICC—Taking TU Youyou Awarded Nobel Prize as an Example

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Abstract

Based on the practice of high school English reading teaching, this paper firstly introduces the information about the high school English reading teaching demonstration lesson; secondly, it uses scaffolding to explain the different types of scaffolding that the teacher builds for students' learning in the demonstration lesson and the operation steps; furthermore, it adopts the four dimensions of students' learning, teachers' instruction, nature of the curriculum, and classroom culture to observe and analyse the demonstration lesson of the high school English teaching—Tu Youyou Awarded the Nobel Prize; finally, the demonstration lesson was commented and summarized.

Keywords

High school English reading teaching, Scaffolding, LICC

1. Introduction about the Lesson Examples

1.1 Lesson Sources

The selected textual content is taken from the reading part of the first unit of the book four of the People's Education Press, and this high school English demonstration course is a Zhejiang practice for the transformation of teaching and learning in general high schools.

1.2 Lesson Background

This high school English demonstration lesson is from the Reading and Thinking section of Unit 1 of Book 4—Tu Youyou Awarded Nobel Prize and the teacher is Ms Ma Jinchun from Hangzhou No.2 Qianjiang School. The course is a high school English reading classroom in the perspective of the new curriculum. The demonstration class was a long reading class with students from class 508, grade 2.

Text analysis of People of Achievement:

What: The topic of the reading text in this unit is “People who have made remarkable achievements”. Under the title of “Tu Youyou Awarded Nobel Prize”, the text reports this important news to the readers

and introduces Tu Youyou's biography and the process of discovering and extracting artemisinin for the treatment of malaria, which provides the readers with more detailed information than a simple news broadcast. The content of the text is objective and accurate, using concrete data to illustrate the arduous scientific research process of Tu Youyou and her team and the great value of the discovery of artemisinin.

Why: The purpose of learning this text is to let students get close to Tu Youyou, the Chinese Nobel Laureate in Physiology or Medicine, to learn about the research process of her and her team's discovery of artemisinin, to learn about the great qualities of scientists, and to set up a correct outlook on life and values. At the same time, they can deeply feel the outstanding contributions of Chinese traditional medicine and Chinese scientific research to the world through the text and build up national cultural confidence.

How: The text reflects the "inverted pyramid" structure of news. The first paragraph briefly reports the important event of Tu Youyou winning the Nobel Prize, including the time, characters, events and reasons. The second and third paragraphs introduce Tu Youyou's life experience, mainly describing how Tu Youyou and her team discovered and refined artemisinin, so as to let the readers appreciate the hardship of the research as well as Tu Youyou's excellent qualities. The fourth paragraph highlights the great significance of the discovery of artemisinin through Tu Youyou's speech.

Teaching objectives:

By the end of the class, students are able to:

1) acquire and sort out writing corpus and advanced expressions that can be used for different aspects of characterisation (e.g. appearance, identity, character traits, good character, achievements and contributions, biography, influence and evaluation, etc.) to form a map of knowledge structures;

2) use the language and expressions learned to describe and explain the people and heroes they admire;

3) explain and argue the meaning of great achievements and the knowledge of the heroes in your heart.

1.3 Teaching Procedures of the Sample Lesson

Step 1 Lead-in.

T: Do you still remember where my name Lavinia comes from?

Ss: Shakespeare.

T: Yes. From a poem written by Shakespeare. Actually, there was a father. He named his child after a poem too. Let's have a look. (How gaily call the deer, while eating southernwood.—Xu Yuanchong) Who is the child?

Ss: Tu Youyou.

T: Yes. She is Tu Youyou. Do you know anything about Tu Youyou? Are you familiar with her?

S1: Physiology or medicine.

S2: She discovered a traditional Chinese medicine—artemisinin, which is used to treat malaria.

Step 2 Prediction.

T : Look at the title and think about where would you most possibly find this passage?

Ss: In a newspaper.

T: Why?

Ss: The title just mentioned who, do what and where.

T: If you were the journalist, what aspects would you write about according to the title? (Group Work) There is no correct answer for this question, so just answer it freely.

S1: What did she do to win the prize?

S2: What's the significance of finding artemisinin?

S3: How did she discover artemisinin?

S4: Who is she?

S5: Why did she try to find artemisinin?

S6: What's her future plans?

S7: What's her personality?

T: Shall we find the answer of your questions from the passage? You have 8 minutes to read through the passage and underline the key information so that it may help you to form your answers.

Step 3 Find the answers and check the prediction.

T: Who is Tu?

Ss: Tu Youyou, a committed and patient scientist, was born in Ningbo, China, on 30 December 1930, and graduated from Peking university Medical School in 1955. After she graduated, she worked at the Chian Academy of Traditional Chinese Medicine in Beijing. (T explained the meaning of "committed")

T: Why did she want to find artemisinin?

Ss: In 1967, the Chinese government formed a team of scientists with the objective of discovering a new treatment for malaria, and Tu Youyou was among the first researchers chosen. (T explained the meaning of "objective")

T: What did she do to win this prize?

Ss: Her research led to the discovery of artemisinin, a crucial new treatment for malaria.

T: Can you guess the meaning of "crucial" and "vital".

Ss: important/essential.

T: Why is artemisinin crucial and vital? Can you find any evidence?

S1: Artemisinin has saved hundreds of thousands of lives, and has led to improved health for millions of people.

S2: Over 200 million people around the world get malaria each year, and about 600,000 die from it.

T: can you find one more numbers in this paragraph?

S2: 100,000 lives a year in Africa alone.

T: You see those numbers directly tells us why it is important and those numbers are very impressive. But apart from numbers, how about other small words? Let me give you an example, I'd like to pay attention to this one—"New". What does that mean? It means that there must be some old treatments in the past and "new" also proves that artemisinin is crucial and vital. Now, I will give you 1 minute to find more small words to prove this point.

S1: Alone, each year.

S2: Has saved, has led.

S3: Part.

S4: Around the world.

Step 4 Question and answer.

T: How would you feel if you win the Nobel Prize?

S1: Impossible and surprised.

S2: Happy and excited.

T: Let's move back to this passage, how did Tu feel about being awarded this prize?

S1: She felt honored and she was thankful to all of her team.

S2: She is proud of traditional Chinese culture.

S3: She was grateful for her team and country.

T: Since we've found some her feelings in this paragraph, I'd like to move backwards to the previous question—the significance of finding artemisinin towards the world. So what's the significance of finding artemisinin towards China? (Group Work)

S1: Develop great confidence for Chinese people and also for Chinese culture.

S2: The discovery of artemisinin has given our Chinese confidence and let others believe in our Chinese medicine culture.

T: Have you ever done any experiments in your chemistry or science classes? What do you usually do before the experiment?

S1: Study the theory.

T: Before the experiment, you probably need to review the textbook for a reference. After you prepared well, you will start doing the experiment. If you're not sure you're successful or not, what would you do?

S1: To test it or ask teachers for help.

Step 5 Find out the stages of discovering artemisinin.

T: Now, let's put your own experience back into this passage, I wanna you to find out what were the stages of discovering artemisinin? Take some notes on your working sheets. Could you please share your answers with us. How many stages first?

S1: I divided it into four stages.

T: Now, the second stage?

S1: The second stage is reviewing ancient tests.

T: The third stage?

S1: The third stage is to try different ways to treat wormwood.

T: All in all, the fourth stage is testing the medicine. This is his version. You can have your own versions as long as you have your own reasons. Let's take his version as an example, there are four stages. The first one I've already gave it to you—studying malaria patients. Can you find any details from the textbooks tell you how she study the malaria patients?

Ss: No.

T: How about stage 2? Let's take stage 2 as an example? What did she/they do? What was the purpose/result?

Ss: Review/find. Examined, evaluated, tested/discovered.

T: Again, I'll give time back to you. You need to find stage a and stage 4. What did she/they do? What was the purpose/result? How about stage 3?

S1: Tested/suggested, found no effect. Tried boiling, using/did not work. Analyzed/found...suggesting..., concluded. Using, draw out/found, worked, succeeded.

T: How about the last stage? The last stage is quite easy. What did they do?

S1: Tested/recovered.

T: From those verbs, can you tell me what kind of person is Tu?

S1: She insisted on doing something and she is devoted/committed and patient.

T: Any other evidence you've found?

S1: She is selfless. Because she tested medicine on herself.

S2: She is undefeated. She didn't give up.

S3: She is a knowledgeable person and she is determined. Because she analyzed the medical texts again.

S4: She is brave. Because she tested the medicine on herself.

T: Can you see the circle? It tells you how difficult the scientific work is. And sometimes you have to repeat some dull and boring things again and again. But as long as you stick to it, you will finally be successful.

Step 6 Critical thinking and discussing.

T: What role did Tu play in her team?

S1: She is a leader also a teacher.

T: Let's read the famous quote from Albert Einstein—Try to become not a man at success, but try rather to become a man of value. Can you guess where I found this sentence?

S1: The opening page.

T: Yes. I found it quite interesting. The title called "People Of Achievement". Based on what we have learned about Tu Youyou, would you share with us your understanding of these three concepts? (Achievement/value/success) Now, I will give you 5 minutes to discuss in groups and share share your

understanding with us. You can ask me anytime if you have any questions.

S1: Tu won the prize and it's just for her own career. But the medicine saves millions of people.

S2: Tu faced the success and failure repeatedly, that's why she became a man of achievements.

S3: Tu discovered artemisinin to treat malaria and she won the prize.

Step 7 Assignment

Polish your presentation on A person of achievement and put it into a written piece. For more information about Tu and Artemisinin, you may refer to www.womenofchina.com and www.Shine.cn/Influential-Women-in-Chinese-History.

2. Analyzing Teaching and Learning Based on the Scaffolding Instruction

2.1 Definition of Scaffolding Instruction

“Scaffolding” originally referred to a set of poles and boards that are built into a structure for workers to stand on when they are working on the outside of a building. Borrowing the metaphor of “scaffolding” from the architecture industry, Bruner, Wood and Ross (1976) described scaffolding as the process that enables a child or novice to solve a problem, carry out a task or achieve a goal which would be beyond his unassisted efforts.

2.2 Types of Scaffolding

Many scholars have explored and researched the types of scaffolding, and there are different classifications of scaffolding. Different types of scaffolding will be built for different learning tasks and different levels of learners. According to Wang Duqin (2009), scaffolding can be text, audio and video, tactile or kinesthetic type of activities, and teachers' guidance or classmates' help. Specifically, it includes schema scaffolding, activity scaffolding and guidance scaffolding. Fu Saitao (2016) categorized scaffolding into context scaffolding, collaborative inquiry scaffolding, and effect evaluation scaffolding. Zhu Long and Fu Daoming (2020) categorized scaffolding into question scaffolding, affective scaffolding, and argumentative scaffolding. Based on the types of scaffolding proposed by scholars, this paper summarizes the following commonly used scaffolding types.

The first type of scaffolding is schema scaffolding. Schema in the broad sense include knowledge related to learning such as language knowledge, strategy knowledge, cultural knowledge, topic knowledge, task knowledge, etc.

The second type of scaffolding is context scaffolding. Context scaffolding refers to the creation of clearly organized, in line with students' cognitive characteristics of the real situation, through pictures, videos and other forms of students in the context of learning knowledge, but also pay attention to the use of students' life experience to transfer to the reality of life situation.

The third type of scaffolding is question scaffolding. Question scaffolding is the most common scaffolding for the learning process, and teachers can provide students with opportunities to communicate and express themselves in the classroom by building a chain of questions for students in the process of teaching, triggering students to think about and discuss questions, checking their

understanding of knowledge, and ultimately completing their learning task.

The fourth type of scaffolding is suggestion scaffolding. Suggestion scaffolding is inspirational and suggestive, and when working in groups to consolidate and improve knowledge, teachers can provide suggestion scaffolds to guide students to explore what they have learned.

The fifth type of scaffolding is feedback scaffolding. After the group discussion, students carry out self-assessment, peer assessment or teacher-student assessment, teachers can provide feedback scaffolding for students to realize their own strengths and problems, so as to enrich the cognitive structure of the students and cultivate their thinking quality.

The sixth type of scaffolding is example scaffolding. An example, is a learning outcome that meets the requirements of the learning objectives and often covers the most important inquiry steps in the learning of a particular topic.

The seventh type of scaffolding is tool scaffolding. In student-centered teaching activities, the cognitive, conversational, collaborative, and presentation platforms provided to ensure the smooth implementation of the student learning process are tool scaffolds, such as whiteboard, PowerPoint, etc.

The eighth type of scaffolding is chart scaffolding. Charts and tables can visually express connections between things and are useful in helping students describe information in a visual way.

The ninth type of scaffolding is strategy scaffolding. In the process of reading teaching, teachers should teach students relevant reading strategies to help them deepen their understanding of the content of the text so as to improve their reading efficiency.

In the demonstration class, seven types of scaffolding were used, including schema scaffolding, question scaffolding, feedback scaffolding, example scaffolding, tool scaffolding, chart scaffolding and strategy scaffolding. First of all, Ms Ma explains that his English name comes from a Shakespearean poem, which leads to the main character in the reading discourse, Tu Youyou. Ms Ma used schema scaffolding to provide students with background knowledge related to the discourse. Second, Ms Ma is question-oriented in the teaching process, and through a series of questions, she gradually guides students to deepen their understanding of the content of the text and learn about the research history of Tu Youyou and her team. Third, the teacher gives immediate feedback and adds to the students responses after they had answered the questions and at the end of the group discussion. Fourth, the teacher elaborates on the more difficult questions and simplifies them by giving examples, thus helping students to quickly identify the four stages of the discovery of artemisinin and their detailed information. Fifth, the teacher uses the multimedia to help her complete the teaching process, which is called tool scaffolding. In addition, chart scaffolding is used in the teaching process. The chart can help students describe the important information in a visual way. Finally, the strategy scaffolding is used to help students have a better understanding of the content of the text.

2.3 Procedures of Scaffolding Instruction

Most scholars have drawn on He Kekang's (1997) description of the five steps of scaffolding instruction.

Step 1 Setting up scaffolding

Teachers build conceptual framework for students based on their ZPD according to current learning topics. Before reading, teachers need to understand students' current learning levels and provide students with scaffolding of relevant background knowledge. For example, teachers can assign relevant pre-reading tasks for students to find background knowledge related to the content of the text. In the demonstration class, the teacher first tells students that her English name comes from a poem by Shakespeare, which leads to the main character Tu Youyou. Through a series of background knowledge explanations, the teacher builds up a schema scaffolding for students and paves the way for their understanding of the text.

Step 2 Entering the context

Teachers need to introduce students to the learning context. After the teacher introduces the background knowledge of the current learning topic, the teacher should set up a problematic situation to guide students into the conceptual framework for independent thinking. For example, before reading, teachers should create an authentic learning situation for students and guide them into the learning situation. Teachers can also play videos, audiotapes and pictures related to text to guide students' thinking. Teachers can also create chains of questions for students to participate in discussions related to the topic being studied. In the demonstration class, the teacher starts from the title of the article, activate students' existing knowledge through a series of questions, ask questions related to the theme of the article and lead students into the reading situation, solving related problems one by one.

Step 3 Independent exploration

Before the exploration begins, the teacher should inspire and guide the students before letting them analyze on their own. In the process of exploration, the teacher should give prompts at the right time. Teachers can provide more guidance initially and gradually reduce their help to students, allowing students to explore on their own. Finally, students should strive to be able to continue to climb in the conceptual framework without teacher guidance. In the demonstration class, once students are in the reading context, the teacher gives ample reading time for students to read and think. Students read the text independently and think about the questions listed on the board that relate to the text.

Step 4 Cooperative learning

The teacher divides the students into small groups for cooperative learning and discusses the material to be read. In the process of student discussion, students continue to draw on and refine their own perceptions and constructs of knowledge, and the teacher adds to and refines the discussion once it is complete. In the demonstration class, after students' personal exploration of the teacher's list of questions, students gain an understanding of the main elements of the text. The teacher discusses the questions to stimulate thinking and sharing of personal views so that students can gain a deeper understanding of the core ideas of the text and the concepts of achievement, value and success.

Step 5 Effect evaluation

Effect evaluation includes students' self-evaluation, peer evaluation and teacher-student joint

evaluation. Effect evaluation is a timely and effective evaluation by teachers of students' individual learning ability, students' cooperative learning, and whether students have completed the construction of the meaning of the knowledge they have learned. Teachers should do a combination of formative evaluation and summative evaluation. In the demonstration class, the teacher have commented on and added to students' responses after they have answered the questions, which helps to help students understand what they have learned.

3. Analyzing Teaching and Learning from the Perspective of LICC

Cui Yunkuo (2012) argues that the LICC paradigm of classroom observation starts from the current problems of listening and evaluating lessons as a kind of classroom research, adheres to scientific pragmatism, and through the deconstruction of the classroom, advocates the formation of different collaboratives by teachers to study the problem of effectiveness of classroom teaching by adopting a methodology similar to that of scientific observation. Classroom observation is a professional activity of recording, analyzing and studying the classroom situation, in particular the details of teaching and learning, through planned observation, and using this as a basis for improving teachers' classroom teaching and students' classroom learning. Compared with general observation activities, classroom observation requires the observer to have a clearer purpose of observation, to collect information and data from the classroom directly or indirectly with the help of certain observation tools (observation scales and video equipment, etc.), and to make corresponding analyses and studies accordingly. LICC, i.e. Learning, Instruction, Curriculum and Culture. LICC, i.e. four dimensions: Learning, Instruction, Curriculum and Culture. Each dimension consists of five perspectives (Preparation, Listening, Interaction, Autonomy and Achievement for the Learning dimension, and Session, Presentation, Presentation and Achievement for the Teacher Teaching dimension). The "Teacher Teaching" dimension consists of five perspectives (the "Learning" dimension includes preparation, listening, interaction, ownership and achievement; the "Teacher Teaching" dimension includes linkage, presentation, dialogue, guidance and resourcefulness; the "Nature of the Lesson" dimension includes objectives, content, implementation, evaluation and resources; and the "Classroom Culture" dimension includes thoughtfulness, democracy, creativity, caring and attributes).

3.1 From the Perspective of "Learning"

The students had learned the listening and speaking part under the theme of the unit before the reading lesson, so they had some background knowledge related to the theme. The students were largely alone in preparing for what they learned in class, and the task was well done. Almost all the students listened attentively to the teacher during the class. When a student volunteered to answer the teacher's questions, the rest of the students listened attentively to their classmates' answers. When listening, most students take notes or respond. During the interactive sessions, students asked questions related to the text and shared their opinions helped to achieve the teaching objectives. Among them, most students participated in classroom interactions, group discussions and classroom activities with a strong

classroom atmosphere. In addition, students had more time for independent learning and exploration, and the whole class had time for independent reading and exploration, with very few students experiencing distractions. Students' independent learning took various forms, including individual exploration, note-taking, independent thinking and answering questions, and the teacher provided verbal guidance to the academically gifted students and the struggling students respectively in the process of students' independent learning. Students had some understanding of the learning objectives of the lesson, and their answers to the questions and discussions during the teaching process proved that the teaching objectives were achieved. The teacher gave a summary at the end of the lesson, and there was no post-class sample test.

3.2 From the Perspective of "Instruction"

The demonstration class consists of seven teaching segments, which are progressive and reasonably allocated in time. The teacher starts from reading the title, guides students to ask questions, analyses the questions and solves the problems, and each teaching segment focuses on the teaching objectives, which is conducive to promoting students' learning. The teacher's introduction introduces the author of the reading passage, Tu Youyou, by introducing the origin of her English name to the students. Students ask a series of questions related to the content of the text according to the relevant background knowledge they have acquired. The teacher writes on the board the questions raised by the students and leads the students to read the text and solve the problems, taking the students as the centre of classroom teaching is the feature of this demonstration lesson. The teacher's explanation starts from the topic and is clear, well-structured and fits in with the learning theme. The teacher presented on the board vocabulary words affecting reading comprehension and six questions raised by students around the content of the reading text, which were focused and conducive to promoting student learning. The multimedia presentation of the core content of the text, such as the stages of the discovery of artemisinin, Tu Youyou's role in the team, Tu Youyou's character qualities, and students' understanding of the three concepts of achievement, value and success, is conducive to students' gradual deepening of their understanding of the text. When students encounter difficult questions, the teacher provides sample scaffolding to help them answer the questions. In the process of teaching, the teacher grasps the timing, target, number of questions and the type, structure and cognitive difficulty of the questions in place, and asks questions about the important and difficult points in the text to inspire students to think. Different students are invited to share the incomplete answers of other students, and the teacher makes comments and supplements at the end. The teacher uses a variety of learning forms such as student independent learning, group cooperative learning and student inquiry learning to carry out teaching activities, and inspires students to divide their work and discuss and form their own opinions. The teaching design highlights the important and difficult points, and the teaching design features distinctive characteristics, which are different from the traditional mode of introduction and teaching, and the teacher's facial expression, body gestures and other non-verbal behaviors can let students know whether their understanding of the problem is comprehensive or not.

3.3 From the Perspective of “Curriculum”

The pre-determined teaching objectives are presented through a series of teaching activities, and the statements of the objectives make use of the verbs in Bloom’s classification of educational objectives. The teaching objectives are in line with the requirements of the activity-based view of English learning, and the activities designed are progressive from learning and understanding, application and practice to transfer and innovation, which is suitable for the learning level of the second-year students. The teacher leads students to read the text through questions and dig deeper into the core ideas conveyed by the text. The capacity of the class was large, lasting nearly 80 minutes, but it was suitable for students because the content was familiar to them. The teacher used a didactic approach to the lesson, encouraging discussion and enquiry through a series of learning activities to achieve the teaching objectives. The teacher is student-centred and concerned with guiding students’ learning methods. By creating different learning situations, students learn in contexts with high student participation and an active classroom atmosphere. The teacher tests whether the learning objectives have been achieved through the students’ answers to the questions, and the teacher can infer whether the students have mastered the relevant knowledge through the students’ answers and facial expressions, which can also promote the teacher to improve the teaching methods. The teacher presented students with what they had learned through multimedia, built different types of scaffolds for students to promote students’ mastery of knowledge to help them generate their own work after class, and recommended two websites for students to learn about the article for their reference.

3.4 From the Perspective of “Culture”

This model lesson demonstrates advanced cognitive skills with problem-driven instruction. Once students had background knowledge of the text, students engaged in independent thinking with guidance from the teacher, who walked around guiding students and answering questions. The teacher treated errors in students’ thinking by asking rhetorical questions or giving examples. Students’ participation in the classroom is high, every student participates in classroom activities equally, and the teacher-student relationship is relaxed, harmonious and cordial. The pedagogical design is different from the traditional English classroom in that it starts from the origin of the teacher’s own English name, transitions to the main character of the article and then to the content of the text, in a gradual progression. The teacher walks around and participates in student group discussions and provides timely guidance. The learning objectives are geared towards all students, from easy to difficult, and the teacher manages them in a way that is sensitive to the learning needs of different students, allowing them to express their ideas voluntarily and independently. There is a close connection between the various teaching links, and the handling of the content of the textbook highlights the grasp of the learning theme. The teacher’s language expression, knowledge, teaching skills, thinking, etc. all reflect his teaching strengths, and the teacher-student relationship is equal, harmonious and democratic.

4. Conclusion

Firstly, the teaching objectives are set accurately and achieved to a high degree. The teaching objectives of this lesson are suitable for the cognitive level and thinking development requirements of the sophomore students, and they are set according to the teaching content and the actual situation of the students; the reading teaching consists of seven steps, and the objectives are implemented through the three links of pre-reading, reading and post-reading.

Secondly, the teaching design is of high quality and shows a certain innovative spirit. In the course of teaching and implementation, activities are reasonably arranged with clear objectives for each activity, and the gradient of the activities is progressive, providing sufficient language scaffolding for students; they are good at creating situations to create a relaxing and pleasant classroom atmosphere; independent learning is carried out through working in pairs and small groups, and learning is carried out in a timely manner. They are good at creating situations that create a relaxed and enjoyable classroom atmosphere; they engage in independent learning through pair work and group work, and provide feedback on learning so that students can make use of the language they have learned.

Thirdly, emphasis was placed on the development of students' pragmatic skills in specific language contexts. Emphasis was placed on subject participation, and a variety of modes of interaction were used in teaching and learning, reflecting the practical and communicative nature of language teaching. All students participated actively, with active thinking and strong interest.

Teachers and students had plenty of interactive training activities; students learned to co-operate in the learning process, and co-operative learning was effective.

Finally, the entire teaching process is fresh and smooth, and the articulation between various links is relatively natural. The whole teaching process is fresh and smooth, and the articulation between the various links is relatively natural.

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