

ORIGINAL RESEARCH

An exploratory foreign language curriculum: The creative application of RICH in senior high school English instruction

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Abstract

Purpose With the rapid development of globalization, foreign language learners are supposed to have the ability to use the language in intercultural communication accurately and appropriately. However, guided by the traditional teacher-centered language teaching and learning model, learners cannot meet the requirements of social development because the knowledge that students acquire is rather limited, let alone learning and applying abilities. Meanwhile, their interest in learning a foreign language cannot be fully stimulated. RICH, a creative curriculum concept, combines Research-based Learning, Integrated Curriculum, Cooperative Learning, and Humanistic Outcomes. The new curriculum concept aims to lead students to enter the language classroom as thinkers and researchers, developing their humanistic qualities and their abilities to use the English language in practice through interdisciplinary studies so as to promote their intercultural communicative ability eventually. **Methods** To test the applicability of RICH in senior high English school instruction, qualitative and quantitative research methods were employed, including one academic year's teaching experiment lasting from 2020 through 2021, video recordings of instructing cases, and semi-open interviews with some subjects. **Results** Research data has demonstrated that RICH can be of great help in creatively designing and implementing key competence cultivation-oriented English instructions in the context of the New Curriculum Standards for senior high school English instruction.

Keywords RICH; senior high school English instructions; research-based learning; integrated curriculum; cooperative learning; humanistic outcomes

1. Introduction

For a long time, there has been a tendency in the teaching of English in primary and secondary schools in China to place too much emphasis on the teaching and transmission of basic English knowledge, such as vocabulary and grammar, to neglect the cultivation of students' ability to use English in practice and to learn it independently, and to overemphasize the role of the teacher as a knowledge transmitter, while neglecting the other multiple functions of the teacher and the main role of students (Liu & Hua, 2005). The only purpose of taking tests is obvious. For many senior high students, a significant part of their time is spent learning English by doing examination papers. Such an approach to learning a foreign language is detrimental to learners' mastery of the language (Shu, 2004). In 2017, the Ministry of Education of the PRC promulgated the New English Curriculum Standards for Full-time General Senior High Schools, which was revised in 2020

(hereinafter referred to as the New Standards). The New Standards aims to develop students' key competence of the English subject including language capability, cultural awareness, thinking quality, and learning capability. At the same time, a series of reform and innovation requirements have been made, focusing on the dual nature of the English subject, being instrumental and humanistic, in an effort to make China's elementary English education adapted to the needs of today's globalized development. The New Standards have pointed the way for the sound development of foreign language education in senior high schools. As an English teacher and researcher, I have been exploring how to construct a highly effective English instruction system in accordance with the requirements of the New Standards, based on which learners can experience the happiness of success in English learning and get real improvement of English practical capability and humanistic qualities.

2. Rationale, Theoretical Research Status and Question Posing

2.1. Rationale

The American educator Dewey proposed as early as (1963) that language learning is a personal experience for students. Cook (2016) pointed out that all successful teaching depends on student learning. The British linguist Allwright (2003) proposed exploratory practice (EP) with the aim of understanding the quality of life in the language classroom. In China, scholars such as Wu and Huang (2005) advocated that the exploration and practice of RICH can fully reflect humanistic educational thoughts.

2.1.1. The Socratic ‘midwife’ theory and the Socratic question-and-answer method

Socrates’ ‘midwife’ theory and the Socratic method emphasize that the student is the main object of instruction and that the teacher’s role is a “midwife.” “I do not give knowledge, but I am the midwife who makes it happen. I am not a midwife who gives knowledge, but a midwife who makes it happen (Xiao, 2014, p. 56).” Namely, the teacher’s role is to help students learn through exploring and researching. In question-and-answer instructing activities, students are guided to constantly go beyond the limitations of their own thinking and make more discoveries and innovations, thus realizing the teacher’s role as a “midwife” in students’ understanding and construction of knowledge.

2.1.2. Vygotsky’s social constructivism theory

Vygotsky’s (2012) social constructivism theory asserts that knowledge is acquired through social interaction and construction. Moreover, Mao (2017) mentioned that would-be constructive thought considers learning as a process of meaning construction. Meaning begins with social interaction and exists in negotiated, shared forms. People’s perceptions of the external world are not “mirrored,” but rather that the world is understood through a variety of coordinated approaches such as negotiation, agreement, and comparison of perspectives (Gergen, 1999). Each person’s unique experience and life context allow them to understand and feel differently about the same thing in social interactions. Individuals’ unique perspectives can deepen the understanding of others, while their own perceptions can be influenced by the opinions of others in cooperative learning.

2.1.3. Bruner’s discovery learning theory

Bruner, an American psychologist, advocated active discovery learning and opposed repetitive, mechanical drills. According to Bruner (2009), human beings are involved as a subject in the whole process of acquiring knowledge, and the process of knowing is the active selection, transformation, storage, and application of what comes to the senses. Bruner believed that

the way students think is essentially the same as that of scientists, but that discovery in teaching is not limited to seeking what is not yet known to humans, but is an approach guided by the teacher, with the goal of developing creative thinking, with the basic structure of the subject as its content, and with rediscovery as a step (Yang & Xue, 2009). The distinctive feature is that it is more concerned with the learning process than with the outcome. The instructing process should always be student-centered, allowing students to explore, discover, summarize, and generalize on their own with the guidance of the teacher. Language is used as a tool for communicating information and emotions in meaningful and realistic situations. The final goal is to achieve intercultural communicative competence.

2.2. What is RICH?

Based on and originating from the above theories, RICH is an innovative vision of English education, a brand-new curriculum concept, carried out by pioneers at Zhejiang Normal University in their English instructions for over a decade. The American educational philosopher Cliff Schimmels, who taught at Zhejiang Normal University during his lifetime, summed up this system of English instructions which returns to the real nature of language learning with the English word “RICH,” which represents the basic four elements of the system, namely Research-based Learning, Integrated Curriculum, Cooperative Learning, and Humanistic Outcomes (Huang et al., 2000) (see Figure 2.1). The four elements are both independent and integrated, as in the case of Research-based Learning, which includes Cooperative Learning and Integrated Curriculum. In the case of Integrated Curriculum, it includes Research-based Learning and Cooperative Learning, and the guiding principle throughout is the promotion of the humanities. The instruction concept is based on topic learning and small group cooperation, which mobilize the initiative and enthusiasm of learners, transforming language from a narrow communicative tool into a social interaction of knowledge, and thought and humanistic development. Furthermore, RICH is not simply about the curriculum design and instructing methods but cultivating students toward all-round development, teachers’ achieving their own professional development.

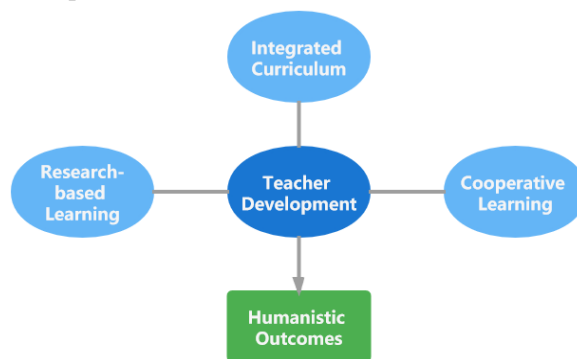


Figure 2.1 The RICH Diagram

2.2.1. Research-based Learning

The complexity of English instruction is reflected in the four elements of RICH. Research-based learning takes teachers and students off the beaten track of learning, which changes the status quo of the classroom where students passively accept instructions and teachers are indoctrinated. It requires teachers to develop students as natural learners and requires students to explore and research interesting topics in groups with the guidance or assistance of the teacher. It unlocks students' own potential, boosts their self-confidence, develops their personalities and independent learning skills, and fosters a spirit of cooperation. Also, it reopens the quest, curiosity, and drive for knowledge that students naturally possess. It allows the vivid language machine within the student's curriculum to bring attention to the needs of the mind, emotions, thinking, and intellectual content in language application. The knowledge gained in this way is of high value to students' lifelong learning abilities. Teachers can carry out research-based learning through project-based research, debates, public speech, and competitions.

The main form of Research-based Learning is Topic Learning. Topic Learning usually goes through the following steps: Confirm Topic, Consult Literature, Prepare Report, In-class Presentation, and Summary and Reflection (see Figure 2.2).

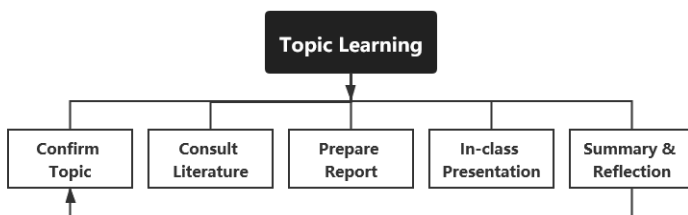


Figure 2.2 The process of topic learning

Confirm Topic: The topic is left entirely for students to look for and determine, without interference from the teacher, whose role is to encourage and support the students to learn with confidence in order to maximize their full potential.

Consult Literature: There could be a teacher-led search for information on the Internet or in the library, while later, group members can work together to find information so that students can discuss with each other to understand the meaning and usefulness of the information.

Prepare Report: The students research the topic and think about the meaning of it, then edit the material on the topic, write a group report, scrutinize it to secure its accuracy, and ask for the teacher's help whenever necessary.

In-class Presentation: The duty groups present their findings and invite classmates to give personal opinions and peer evaluation to show their talents and potential ability and arouse their thoughts.

Summary and reflection: The teacher and students make a comprehensive reflection and evaluation of the whole research process, from identifying the

topic to the final oral presentation, allowing mutual enrichment and helping the teacher to carry out a new round of topic-learning.

2.2.2. Integrated curriculum

Integrated Curriculum requires teachers to break away from the confines of one textbook, expand on it, and develop their own teaching activities according to the rules of English language learning and their students' interests and developmental needs. Curriculum Integration breaks down the boundaries of the curriculum, and realizes the integration of reading and writing, or listening and reading. Another is Subjects Integration which breaks down the boundaries of subjects. Also, Learning and Living Experience Integration combines learning with living experiences and interests, reflecting the humanistic spirit of the RICH concept. Additionally, it also includes Achievements Evaluation Integration, which not only takes students' performance in examinations as an assessment indicator but also focuses on the assessment of the usual process, such as the creation of student portfolios (see Figure 2.3).

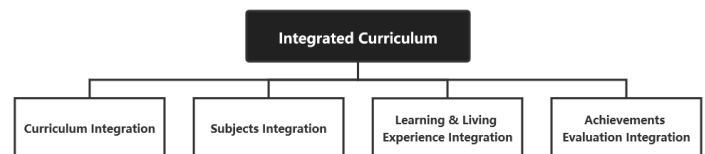


Figure 2.3 Integrated curriculum

What deserves to be mentioned is Subjects Integration in Integrated Curriculum, to some degree, chimes with Content and Language Integrated Learning (CLIL). They both focus on cognitive and constructivism theories of learning which have emanated from general education theory (King, 2018). Part of their theoretical origin is the same, both of which are from theories of cognitivism and social constructivism from luminaries such as Vygotsky, Piaget, and Bruner (Child, 2007) were changing the way that educators thought and practiced, moving the focus away from teacher-centered knowledge transmission delivered in isolated units to student-centered discovery models of education where learners built on existing knowledge by integrating their new knowledge via an inductive approach to learning (King, 2018).

2.2.3. Cooperative learning

Cooperative Learning refers to students working in groups to learn and discuss a certain topic. This approach allows everyone's intelligence, potential, and knowledge to collide and be activated to the greatest extent and gives students who are usually silent and feel inferior in exams the opportunity to show their strengths or excellence (Wu & Huang, 2005). It is combined with three parts: Project-based group cooperation, learning community, and learning as a social activity (see Figure 1.4). Project-based group cooperation means working in small groups on topics through which students' communicative and leadership skills

can be fully polished. The purpose of group learning is to generate a learning community, in which each student has a sense of belonging and identity leading them to share their ideas freely. The essence of community is to see learning as a social activity, rather than as a mere indoctrination of knowledge. By generating interaction between students and community, students gain what goes beyond knowledge (see Figure 2.4).



Figure 2.4 Cooperative learning

2.2.4. Humanistic outcomes

Humanistic Outcomes is the highest expectation of teachers toward students, who are fully humanistic. The final goal of RICH is “being humane.” “The ultimate educational vision of RICH is the maturation of the natural attributes of the student as a thinker and researcher.” This vision needs to be nurtured by teachers with a humanistic mindset. In RICH educational philosophy, teachers’ humanistic concern for students is reflected in the following aspects: teachers providing space for students to develop, activating their life experiences and interests, listening to their stories, creating opportunities for them to show their potential. Then, it ultimately nurtures a humanistic realm in which students begin to engage in direct dialogue with nature, society, and themselves. Students begin to read for ideas; to study for problems, to discuss for wisdom, and to think about reality (Wu & Huang, 2005).

2.3. Literature review of RICH

It is worth noting that, in more than ten years of exploration and practice, the educational pioneers at Zhejiang Normal University have initially proved that RICH is effective to stimulate students’ learning autonomy and improve their comprehensive language using ability. They have written a series of academic papers and monographs with practical significance (Huang & Hu, 2003; Wu & Huang, 2005) and other academic studies targeting students majoring in language major students (Fu, 2020; Jin, 2015; Li, 2020).

The majority of research and theoretical studies (e.g., Hou (2020)), however, are aimed at college English instruction, but the research for senior high is almost blank. Due to the high accordance between the dual nature of foreign language curriculum advocated by the New Standards and the human-oriented teaching ideology of RICH, the author believes that there is great space for research on RICH in senior high English instruction.

2.4. Research questions

This study will focus on the following three

questions: 1) Is it feasible to employ RICH to guide senior school English instruction and education? 2) How to apply RICH in senior high school English instruction and education? 3) Can RICH be effective to develop students’ comprehensive language using capability and key competence of English subject?

3. Research Design

3.1. Methodology

This study is both quantitative and qualitative, including recording of instructing cases and semi-open interviews with students about their opinions and feelings toward RICH. Apart from them, assessment of students’ achievement test was also employed.

The freshmen of one key senior high school in Meishan, Sichuan Province, where the author is working, was chosen as the experimental subject. The duration was one academic year from September 2020 to July 2021. Four other key schools were selected from high schools in Meishan, which were comparable with experimental subject in the teaching levels, students’ English entry scores, English class hours, and textbooks.

RICH was used in the experimental school (group), and the other four schools (control groups) did not adopt RICH. This study utilizes the SPSS 28.0 and the Excel statistical integration target information jupyter interactive platform, and the pycharts function library in Python for data visualized presentation.

The experimental school (hereinafter referred to as EC) adopted the RICH concept includes oral presentations (see the example in section 2.2.1) on topics chosen by the group, videos on topics chosen by the group, and essay summaries on topics chosen by the group. This includes the integration of subject content, life experiences, class debates, and project-based personal speech contest.

The control school (hereafter CS) are the four schools, numbered as CS1, CS2, CS3 and CS4. Teaching was done in a traditional way, in which teacher took more initiative and instilled knowledge into the students.

A fair assessment was made through the academic year (September 2020 to July 2021), taking into account the English results of the city’s second semester final examination. Meanwhile, for the students in the experimental group, the author observed changes in students’ humanities literacy through their classroom activities and interviewed them about their learning experiences, thus reflecting the changes in students’ humanities literacy.

3.2. Instructing cases

3.2.1. Research-based learning

(1) Confirm Topic: The author allowed the class to negotiate and complete groupings of two to three students each. Then each group discussed and had a

brainstorming to choose a topic that they were both interested in. At last, the topics of the groups were *Nucleophilic Substitution*, *Strange Tales from Liaozhai*, *Eating Disorder*, *Top 10 Classical Physics Experiments*, *Danxia Landform*, *Science in Detective Conan*, and *Pythagorean Theorem*.

(2) Consult Literature: The author gave every group three days to prepare for the topic preparation. At the beginning, the author taught students how to use library resources and the Internet to search materials that they need. Group 1 and Group 2 went to the library to borrow an English book about Nucleophilic Substitution and an ancient book about Liaozhai. Some groups used Bilibili to download videos, and others used Geographical website to collect pictures.

(3) Prepare Report: Each group worked together to discuss their topic comprehensively and make a draft and PPT. Then, they asked the teacher to check whether there were any grammatical mistakes and knowledge mistakes. Finally, they polished their research again, and had a rehearsal. For example, Group 4 asked the teacher about some expressions that they did not know and about the structure of their presentation. Then the teacher provided with them her suggestions as a reference.

(4) In-class Presentation: The students will present their findings orally and invite other students to give personal comments. The author arranged two groups of students to present on stage each week according to result of students' drawing by lot.

(5) Summary and reflection: The presenting group members shared the stories with the teacher and classmates, trying to sum up the successful and failing experience. Meanwhile, peer suggestions were welcome, and the teacher gave development-oriented evaluation.

Students SA1 and SA2 shared the topic about science—Eating Disorder. Firstly, the two students divided the presentation into two parts, and the first member led in the topic:

SA1: Hello, everyone. Today, I'm going to talk about 'Eating Disorder.' Do you know what is it?

Other students: Yes.

SA1: So, what is it? If you know, please tell us.

Audience student 1: That means that a person doesn't want to eat anything, and become thinner.

SA1: Yes, that's true.

.....

Secondly, the first student introduced and explained the classification of the eating disorder.

SA1: This symptom has four types. The first one is Avoidant or Restrictive Food Intake Disorder. It means people with this kind of eating disorder under-eat due to lack of interest in food, or intent distaste or how certain foods look, or smell, or taste. They may lose weight or experience nutritional deficiencies due to eating less than is necessary for maintaining a healthy diet. We can see some people using this way to lose weight usually.

SA1: The second one is Anorexia Nervosa. This

is the type everyone usually first thinks of when they hear the term eating disorders. People with anorexia nervosa are obsessed with perfecting their body image. They like to remain in control by limiting the amount of calories they consume to achieve their ideal body shape. Even when they are severely underweight people with this disorder have a hard time recognizing it. Driven by their obsessive compulsive behaviors. They adapt distorted self-perception and have dangerously high expectations.

SA1: The third one is Ulimia Nervosa. People with this type of eating disorder indulge in a large amount of food and make themselves purge shortly after Purging gives them a sense of relief, and similarly to anorexia nervosa, this helps them feel like they are in control of their own bodies. It may be hard for others to spot those with bulimia nervosa because they might be able to maintain a normal weight. Do you have the same situation when you are under pressure?

Audience students: Yes. I often eat a lot when I feel not happy.

Then the second member shared the reasons why people get eating disorder. She talked about girls' body shame and appealed every girl not to be sensitive to own body figure and be confident to accept everything about ourselves, making girls in the class being touched.

Finally, some students expressed their feelings, and the teacher made a conclusion: I'm so surprised to watch such an excellent presentation. The topic is so good and hot. At last, they sublimated the theme, making us rethink of our value towards figure control.

The presentation not only improved the speakers' competence of expressing and logical thinking but also broadened listeners' horizons, making students all-round ones.

3.2.2. Integrated Curriculum

In our class, the main Integrated Curriculum is Subjects Integration, reflecting in every topic chosen by students based on their interests, like the example in 2.2.1. They chose topics that are of interest to them such as science, mathematics, physics, chemistry, literature and psychology. This subject knowledge is told in English, completing the integration of the curriculum, the subjects and the life experiences or interests.

3.2.3. Cooperative Learning

When explaining the articles, the author usually works in groups, playing the role of the students fully, translating the whole article and then testing the results of the students' group work. During the collaborative translation process, activities appropriate to each article are included, such as live broadcasts, press interviews, Q&A sessions, court role presentations, debates and other forms. The class had group work to actively complete knowledge absorption, and it is also able to add interest to the class and value to the course through innovative formats. In addition, it enhanced students' teamwork and cohesion. The following are the examples of learning textbook texts through a collaborative learning approach.

Date: June 10, 2021

Teaching Content: Unit 3 *Faster, Higher, Stronger—The Return of the Champions*.

In the previous lesson, students learned the vocabulary. At the beginning of the class, the author used a video of the movie *Leap* to show the theme of this article. The exciting video aroused the students' interest. Next, the author left 15 minutes for students to work in groups to translate the whole text, leaving each group a project—acting as announcers for the first paragraph of the article. As the students translated on their own, the teacher approached the groups to observe how they were working together and to answer their questions. When the time was up, the teacher determined the order of the interpretations based on the groups of students who volunteered to raise their hands and began to present them in turn.

The first paragraph: The atmosphere here at Rio de Janeiro is electric! If China wins this point, they will walk out of the stadium with an Olympic gold medal. Zhang Changning serves. Over the net, Popovic dives for the ball. She only just reaches it... and it's sent straight back to her by the Chinese spiker Hui Ruoqi. Popovic can't get the ball back this time... and that's it! Its over! It's gold for China! Look how the crowd has gone wild. You can see the joy and pride on the faces of the Chinese fans. And there we see the Chinese players embracing, with tears of happiness in their eyes... It's a dream come true for China! The Chinese women volleyball team is Olympic champion once again!

The presenter of the first group was a sporty boy who loves watching sports and often watches sporting events. His broadcast was as follows:

(Student B=SB)

SB: CCTV, China Central Television, you are watching the final moments of the women volleyball final at the Rio Olympics and the atmosphere has reached a fever pitch. If China takes this point, they will walk out of the tournament with an Olympic gold medal. Zhang Changning serves, and the ball goes over the net, Popovic only touches the ball and it bounces in front of Hui Ruoqi. Popovic can't bounce the ball back again. That's it! The Chinese women volleyball team has won! The Chinese team has won! (YELLING!) (Applause from the stage) We see the joy and pride on the faces of the Chinese fans in the crowd as the women volleyball team hug each other tightly. Their tears overflowed on their happy faces. This is a historic moment, the Chinese women volleyball team has won the Olympic Games again since the 2004 Athens Olympics game, China's dream has come true! We can proudly say that the Chinese women volleyball team are the Olympic champions!

After watching it, students smiled. One student commented: His rendition was like being a loyal spectator on the field of play, and it was infectious that he could overcome his embarrassment on the podium to make such a passionate broadcast. Another student said: His broadcast was so immersive and added to the content, he felt he had a great knowledge base and was well suited to be a field reporter.

Teacher's comment: This student is a regular watcher of the competition, not only was he very professional in translating some of the terminology, but he

was also well prepared by including the important part of the competition for China.

The fourth group on stage were two male students who clasped their chairs onto the podium, sat at their desks and gave an emotionally charged broadcast of the first segment, imitating the tone of a sports anchor. The broadcast read as follows.

(Student C = SC; Student D = SD)

SC: Hello, dear friends and viewers across the country. This is Glan, the anchor, live on CCTV5.

SD: This is anchor Logic.

SC: We are now broadcasting the women volleyball final at the Rio Olympics, and it's China versus Serbia.

SD: Well, we can see how exciting the atmosphere is in Rio de Janeiro.

SC: If China takes this one, then we will walk out of this stadium as Olympic champions.

SD: We can see Zhang Changning serving the ball live.

SC: The ball goes over the net! Popovic lunges at the ball. But she seems to have touched it tightly.

SD: That's an average quality catch.

SC: Indeed.

SD: Well, we can see that Chinese snapper Hui Ruoqi has sent the ball straight back.

SC: Popovic shouldn't be able to catch it this time.

SD: She did miss it. Score!

SC: Good shot! (Stood up and applauded) It's over! It's over! The Chinese women volleyball team have won the championship!

SD: (stand up) We can see how excited the crowd is!

SC: You can see what pride, what pride, what joy on the faces of every Chinese fan!

SD: We can also see the Chinese women volleyball players. They are clinging to each other. We can still see the tears of joy in their eyes.

SC: For the Chinese women volleyball team, for the Chinese sports community, for the Chinese people, for us in China, this is the realization of our dream!

SD: The Chinese women volleyball team has once again won the women volleyball championship at the Olympic Games.

SC/SD: Let's give them a big round of applause. (Applause)

The class applauded excitedly, and one student commented: I felt like I was back on the day of the Olympic games, very emotional, and the two students were so well matched. Another student commented: I was so excited, I had the aura of an anchor, calm and passionate. They brought the chairs up to the podium and felt very professional looking. The teacher said:

This group had a great idea, sending two students to imitate the anchor, and it was very tacit and infectious, which is the effect of our long-term cooperation.

After the performance was completed, in the second lesson, the teacher asked the students to translate the text and explain the key words and phrases. During this process, the students were constantly guided to associate old knowledge and make generalizations. Then, the teacher introduced the topic, what do you think the spirit of Chinese women volleyball is? The students were given five minutes to discuss in groups and then send them to the stage to express their views.

Classmate 1: I think the spirit of Chinese women volleyball is not afraid of hardship, not afraid of tiredness, the spirit of courageous struggle.

Classmate 2: I think the spirit of Chinese women volleyball is the spirit of not giving in to defeat as long as there is a glimmer of hope, but also the spirit of daring to fight.

After the students finished their speeches, the teacher concluded: Everyone's speech is very good, the spirit of Chinese women's volleyball is a spirit of struggle, perseverance, and defiance. I hope that you can also carry this spirit forward in your studies.

Through the above teaching strategies, the author aims to bring into play the subjectivity of students and the leading role of the teacher, to continuously stimulate students' interest in learning and to enhance their thinking skills and humanistic literacy.

3.3. Semi-open interview with subjects

The enhancement of humanistic literacy is the cumulative result of a long course of study. During the academic year, teachers also continue to notice changes in students' behavior. For example, the choice of topics became progressively more in-depth, they paid closer attention to current affairs, they took more initiative in working in groups, and the atmosphere in the English classroom became more vivid, among other changes. The following are extracts from interviews in English with several students from the pilot group schools about their feelings about English learning during the current year.

Amy: For me, what deserves mentioning is the improvement of my English application ability. Such activities create specific and realistic situations for my English learning, so that I can not only practice my on-the-spot reaction but also polish my English application ability. What's more, it offers me precious opportunities to cooperate with my classmate, which deepened our understanding to each other.

Penny: All the time, I've been fond of this kind of teaching that combines learning knowledge as well as skills and having fun. For instance, the duty report has constructed a stage for everyone. All of us need to try our best to coalesce our interests and English ability in the report for a perfect exhibition in front of the class later. Also, we were asked to learn more about this world due to this activity, not only the things in the real world, but also those golden thoughts. What is contained in the class is far more than only English, the

subject itself. I do believe we can learn handily this way.

Harold: As a proverb says, tall oaks from little acorns grow. Such activities planted a seed of innovation and independence in our mind. Our participation and effort in the growth of thinking is what water, sunshine, and fertilizer to the seed. It's the opportunities to cooperate with classmates that teach us the significance of toleration and team spirit. And we can multiply our gains by the relaxed atmosphere. What's more, diverse topics arouse our interest in English and unlock the doors of knowledge, the gate that guard the entrance to science, art, literature, to name but a few, which broaden our horizons and deepen our understanding of the world.

Dan: Thanks to the English curriculum design, what I've gained are not only the capability of making video clip, courseware, and reading, but also a sense of responsibility, patience, enthusiasm, and confidence, especially the moment I received encouragement from my teacher, which is the motivation to inspire me to move on.

From the students' interviews, it is evident that students' interest in learning English, their self-confidence, their ability to use computers and the Internet, as well as their personal creativity and critical thinking capability, their cooperative awareness, and team spirit, are all promoted and strengthened.

4. Assessment of Achievement Test

4.1. Results and discussion

Through one academic year of instructing practice, the testing results are used to compare the differences between the experimental and control group of schools in terms of the four dimensions of the final results from each school's average English score, the merit rate, the pass rate, the proportion of the number of (excellent to fail) performance bands and students' answers to each section of the questions, reflecting the effectiveness of the RICH teaching concept in practice.

4.1.1. Descriptive data

As can be seen from Table 4.1, the average English final test score of the experimental group was 111.44, which widened the gap with the average scores of the four control groups. One outlier number in the ES was a student who scored 140, the highest score among the five groups in the city. Additionally, the absolute values of the skewness and kurtosis for the scores of the ES and CS 1-4 are all within 0 and 1, suggesting that the scores are approximately normally distributed. A one-way ANOVA was performed to compare the effect of the RICH instructions on the final exam scores. Results revealed that there was a statistically significant difference in the final exam scores between the five groups ($F_{(4, 1428)} = 12.905, p = 0.02$). Tukey's HSD Test for multiple comparisons found that the mean value of final exam score was significantly different between ES and CS 1-4 (all $p < 0.05$).

Table 4.1 Descriptive data of the scores of the five schools

Group	Mean	SD	Kurtosis	Skewness
ES	111.44	12.38	-.33	-.36
CS1	105.75	14.87	.23	-.43
CS2	91.38	13.89	-.51	-.09
CS3	103.94	15.12	-.70	-.20
CS4	94.54	13.22	-.53	-.17

4.1.2. Pass rate & outstanding rate

The horizontal coordinates are the schools, and the vertical coordinates are the pass and merit rates for the second semester. As is shown in Figure 4.1, the experimental group scored an excellent rate of 0.0974 and a pass rate of 0.9231 in the final test, much higher than the remaining four control groups. In terms of merit rate, the merit rate of the control group reached about 3.4 times the total merit rate of the scores of these five schools. In terms of the pass rate, the control group exceeded the total pass rate of the scores of these five groups by about 18%. It is clear from the comparative analysis of these two dimensions that the experimental group using the RICH teaching concept has begun to show a clear advantage in English over the control group using the traditional teaching concept.

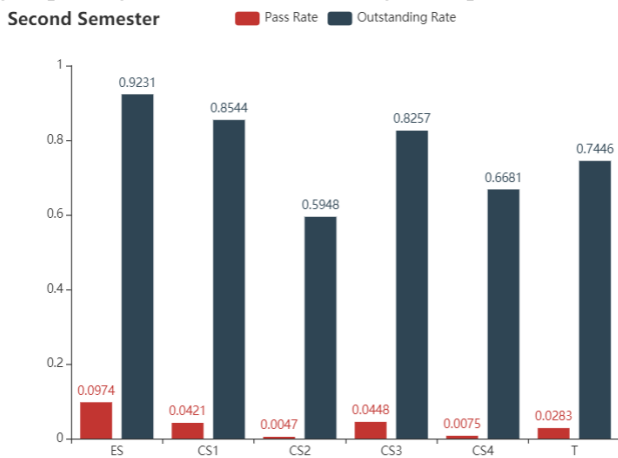


Figure 4.1 Passing rate & outstanding rate

4.1.3. Grades distribution

The Education Bureau divides the grades into four levels, with each level and corresponding mark bands as shown in Table 4.2.

Table 4.2 Grade distribution

Grade Level	Score Range (s)
Fail	$0 \leq s < 90$
Fair	$90 \leq s < 110$
Good	$110 \leq s < 130$
Excellent	$130 \leq s < 150$

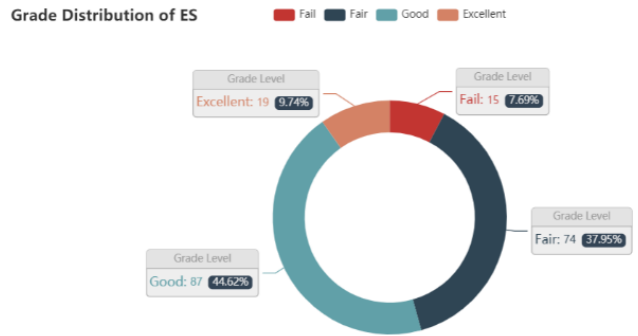


Figure 4.2.1 ES

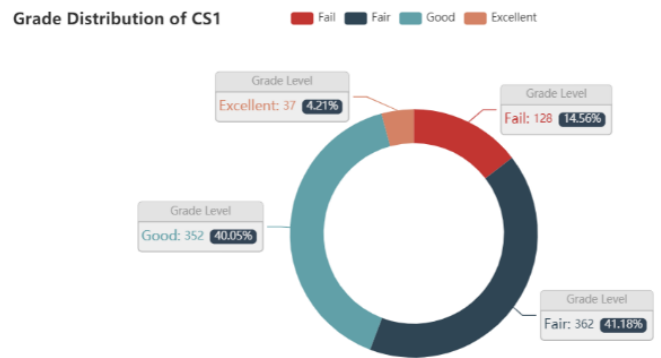


Figure 4.2.2 CS1

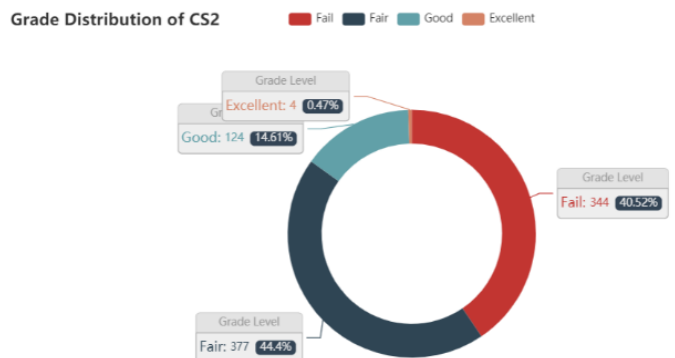


Figure 4.2.3 CS2

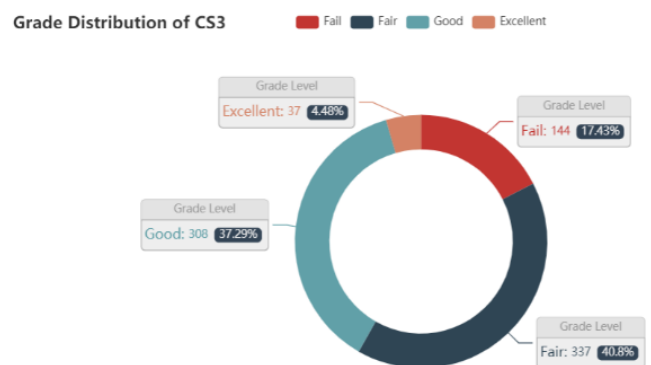


Figure 4.2.4 CS3

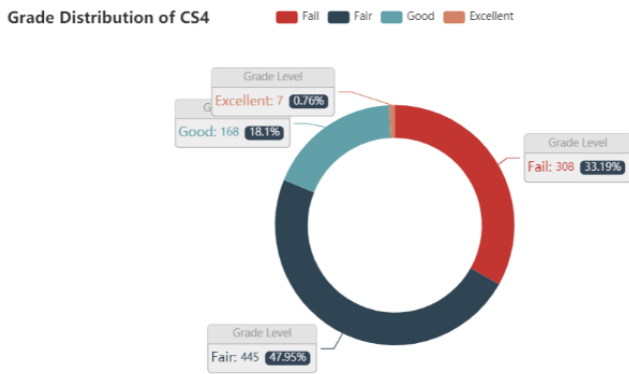


Figure 4.2.5 CS4

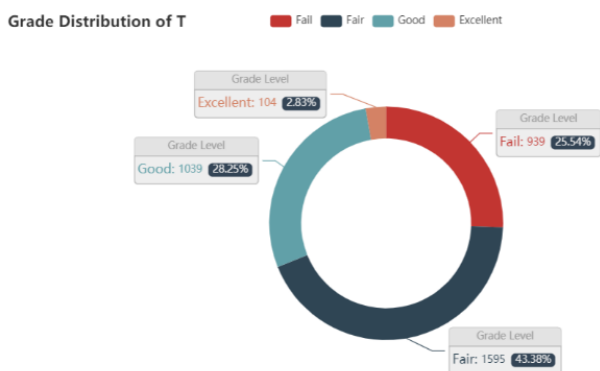


Figure 4.2.6 Total

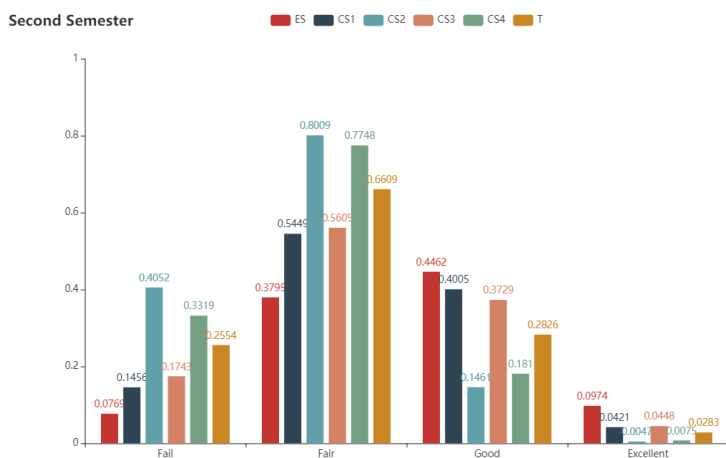


Figure 4.3

Figure 4.2 shows the percentage of students in each grade band in each school, and Figure 4.3 shows the horizontal coordinate of grade level and the vertical coordinate of the percentage of students in the corresponding grade in each school. The experimental group's performance distribution was mainly concentrated on the pass and good grades. The percentages of good and excellent grades were the highest, and the percentages of fail grades were the lowest among the five groups respectively. In summary, the distribution of English grades in the experimental group showed a concentration of good and excellent grades, indicating that the overall English level of the experimental group was higher than that of the control group and that the

proportion of excellent grades tended to expand.

4.1.4. Comprehensive evaluation of competence

There are currently six main types of English test questions in the senior high school English test, namely Listening comprehension, Reading comprehension, Cloze, Grammar, Proof reading and Composition. These six types of questions and their corresponding score distribution is shown in Table 4.3.

Table 4.3 The score distribution

Testing Type	Score
Listening comprehension	30
Reading	40
Cloze	30
Grammar	15
Proof Reading	10
Composition	25

Score of Each Testing Type (ES)

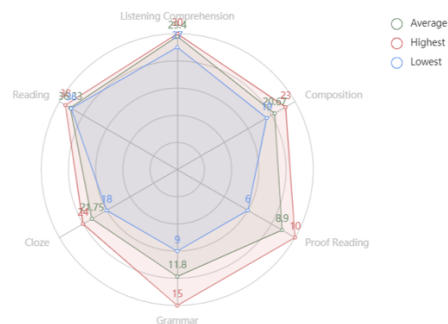


Figure 4.4.1 ES

Score of Each Testing Type (CS1)

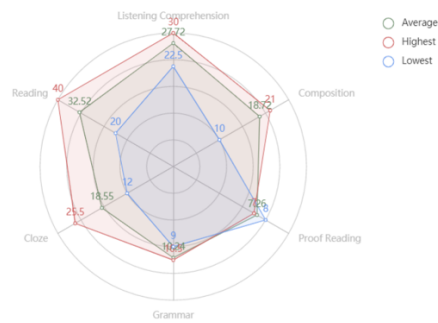


Figure 4.4.2 CS1

Score of Each Testing Type (ES vs CS)

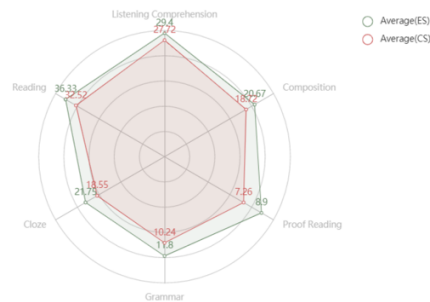


Figure 4.4.3 ES vs. CS

According to each question type and its score distribution, the scores of each question type of the experimental and control groups were integrated and statistically presented in the form of radar charts, and further analysis was done on the basis of this. Among them, Figure 4.4.1 and Figure 4.4.2 selected the students with the highest total score, the students with the lowest total score, and the average score of each question type of the final test results of the experimental and control groups, respectively as the sample representatives. Figure 4.4.3 shows the class with the smallest difference in strength out of the experimental and control schools CS1 as the sample representatives based on the analysis of the raw performance data of the experimental and control schools at the beginning of the semester, which was selected by the author as representative. The mean scores for each question type were placed in the same radar plot for comparison.

As can be seen from the above figures, the experimental group scored higher on average than the control groups in all six question types, especially in the completion, grammar and correction question types. On the other hand, in the listening and reading comprehension questions, the average score of the experimental group was very close to full marks. In summary, the students in the experimental group outperformed the control group in listening comprehension, reading comprehension, writing and English thinking in the English subject. This shows that the students' overall English learning ability was improved under the RICH teaching concept.

The data in the above table shows that the RICH teaching concept is able to improve students' professional English language skills, thus significantly widening the gap with schools of the same level. The RICH teaching concept focuses on the improvement of students' humanities. The changes in the humanistic literacy of the students in the experimental group are reflected by the records the teachers usually take of the students and the completion of the individual self-selected tasks as well as the students' interviews.

The author believes that the one-year practice of using the RICH teaching concept to guide learning has been effective and intuitive. In terms of language skills, as presented in the data, the experimental group had a significantly higher average than the control groups. In terms of thinking skills, students were converted from passive learners to thinkers into the classroom, developing critical and creative thinking. For example, the student interview mentioned that "Such activities just plant a seed of innovation and independence in our mind ..." "The duty report has constructed a stage for everyone..." "...to learn more about this world due to this activity, not only the things in the real world, but also those golden thoughts..." In terms of learning skills, students gained not only the ability to apply English, but also skills outside the subject, such as: editing and making videos, and the ability to search, filter and analyze resources. As the students said, "gain the capability of making video clips, courseware, and reading ..." "practice my on-the-spot reaction but also polish my

English application ability" fully reflects the instrumental nature of the instrumental nature of the English course.

In addition to this, the humanities of the students are enhanced by the practice of the RICH curriculum concept. As the students say, "...offers me precious opportunities to cooperate with my classmate, which deepen our understanding to each other..." "...teaches us the significance of toleration and team spirit..." "the gate that guard the entrance to science, art, literature, to name but a few, which broaden our horizons and deepen our understanding of the world".

Thus, we can make a conclusion that the RICH curriculum can improve student's English skills as well as their humanistic outcomes. That's what the New Curriculum Standards is pursuing.

5. Conclusion

At the end of the academic year, the English exam scores of the classes that have adopted the RICH concept increased significantly compared to when they entered the school and, more importantly, the students have expressed a strong interest in English and have gained confidence and new skills. This study corroborates with Fu (2020), Li (2020), and Jin (2015) in that RICH instructions are feasible in senior high school English instruction and to have a positive impact on the cultivation of students' key competence of English subject and all-round development.

However, there are some limitations in this study. The subjects of this experiment are the national and provincial key schools in the city, and the average level of students is in the upper middle of the general high school students. Since the research activities are challenging guided by RICH, the above activities for lower-level students may be difficult and may lead to negative motivation. The duration of the experiment was only one academic year, and it is not possible to draw conclusions about the longer-term implications of the long-term application of RICH and how to update the activities. In view of the feasibility of the application of RICH in senior high schools, the authors will continue to explore, research, and innovate upon the above issues.

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