DEVELOPING A THEORETICAL FRAMEWORK OF CONSTRUCTIVIST TEACHING IN SECONDARY EDUCATION: PRINCIPLES AND IMPLICATIONS FOR EFL TEACHERS

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ABSTRACT

Constructivist teaching upon the principles of constructivism theory given by Piaget, Vygotsky and other theoreticians has been prominent in recent research on English language teaching and has provided a basis for recent English education reform efforts. Although there are different views on what constructivism is, there is a common agreement that constructivism has played a crucial role in teaching English in Vietnam. This article, therefore, aims to discuss constructivism learning theory as a paradigm for teaching. Specially, the purposes of this paper are to give out a brief description of the history of constructivism, analyze five guiding principles of constructivism, and distinguish traditional views of teaching and constructivist teaching (CT), thus providing a theoretical framework of constructivist teaching in secondary education. Systematic Literature Review, a kind of the descriptive method, was utilized as a primary tool to select and review the previous research with the aim to explore the issues related to constructivism and CT. Results indicated that five dimensions of CT, twelve characteristics of a constructivist teacher and several implications of constructivism for teaching were designed and analyzed systematically.

XÂY DỰNG KHUNG LÝ LUẬN VỀ DẠY HỌC KIẾN TẠO TRONG GIÁO DỤC PHỔ THÔNG: NGUYÊN TẮC VÀ NGỤ Ý DÀNH CHO GIÁO VIÊN DẠY TIẾNG ANH

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TỪ KHÓA

Chủ nghĩa kiến tạo
Dạy học kiến tạo
Nguyên lý/ Nguyên tắc
Học tập tích cực
Tiếng Anh như ngoại ngữ
Giáo dục phổ thông

TÓM TẮT

Dạy học kiến tạo dựa trên các nguyên tắc của lý thuyết kiến tạo do Piaget, Vygotsky và các nhà lý thuyết khác đưa ra đã trở lên nổi bật trong nghiên cứu gần đây về giảng dạy tiếng Anh và đã tạo cơ sở cho những nỗ lực cải cách giáo dục tiếng Anh gần đây. Mặc dù có những quan điểm khác nhau về thuyết kiến tạo, nhưng có một thống nhất chung rằng thuyết kiến tạo đã đóng một vai trò quan trọng trong việc giảng dạy tiếng Anh ở Việt Nam. Do đó, bài viết này nhằm mục đích thảo luận về lý thuyết học tập theo thuyết kiến tạo như một mô hình cho việc giảng dạy. Đặc biệt, mục đích của bài báo này là mô tả ngắn gọn lịch sử của thuyết kiến tạo, phân tích năm nguyên tắc đường hướng của thuyết kiến tạo, phân biệt quan điểm truyền thống về dạy học và dạy học theo kiến tạo, từ đó cung cấp một khung lý thuyết về dạy học kiến tạo ở giáo dục trung học. Tổng quan tài liệu - một loại phương pháp mô tả - đã được sử dụng như một công cụ chính để lựa chọn và xem xét các nghiên cứu trước với mục đích khám phá các vấn đề liên quan đến thuyết kiến tạo và dạy học kiến tạo. Kết quả là năm khía cạnh của dạy học kiến tạo, mười hai đặc điểm của giáo viên kiến tạo và một số hàm ý của việc dạy học kiến tạo đã được thiết kế và phân tích tỉ mỉ, chi tiết.

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1. Introduction

Reforms in secondary education in many nations have typically encouraged a change from teacher-centered and transmission-oriented models to more student-centered, constructivist ones. Recent education reform entails teachers to depart from the traditional practice of knowledge transmission to constructivist teaching where students are encouraged to construct knowledge through inquiry [1], [2]. In other words, in the constructivist classroom, the focus tends to shift from teachers to students. The classroom is no longer a place where the teacher acts as an expert and pours knowledge into passive students. In such kind of class, students are motivated to actively participate in the learning activities to construct their knowledge thus, keep them engaged during a longer period of time [3]. Since knowledge construction requires connection with prior knowledge, constructivist teaching draws on students' prior knowledge and experiences [4]. In such learning environment, the teacher's primary role in constructivist classrooms is to assist students create meaning through active and relevant experiences and students are encouraged to share their ideas unlike traditional classrooms where instruction is mainly based on textbook [5].

It's true that constructivism has been proven effective in assisting teachers in meeting the challenge of improving student achievement, which requires teachers to step off the stage, relinquish some of their power, and release the textbooks to allow their students to be actively engaged and take some responsibility of their own learning [6]. Moreover, constructivism enables learners to actively participate in the learning process by acquiring capabilities, such as autonomous learning and self-evaluation. From this aspect, the constructivist approach involves how learners reconstruct knowledge, rather than accept a piece of information as a given. Beside that, the key stakeholders in this transition process are teachers; therefore, if teachers are willing to change according to the proposed new educational principles, the reforms will have a greater chance of being successful. However, most reform ideas and practices are determined in a top-down manner and have not yet created enough opportunities for effective training and teacher support [7]. Even if teachers want to change according to newly proposed educational principles, they have prior beliefs about the nature of knowledge, teaching, and learning that reduce the incorporation of new instructional practices [8], [9]. Because of these beliefs, teachers need extensive in-service teacher training that covers the new reform ideas and pedagogies.

As Witfelt (2000) [10], the role of the teachers in the constructivist teaching is a facilitator who provides the guidance, encourages the students towards collaboration work, discovers the students' special abilities, and facilitates the students' duties. The constructivist teaching approach is based on the assumption that both teachers and students are not the two sides in the learning process, but represent a team which cooperates towards achieving a common goal by overcoming the barriers in the learning process [11]. In the current paper, the history of constructivism along with its characteristics would be briefly summarized, providing an overview five guiding principles of constructivism before distinguishing traditional views of teaching and constructivist teaching. From there, five dimensions of constructivist teaching, twelve characteristics of a constructivist teacher and several implications of constructivism for teaching were systematically designed and deeply discussed in this study.

2. Theoretical framework

Three types of learning theories

There are many different learning theories established based on how students learn. Among these learning theories are Behaviorism, Cognitive and Constructivist learning theory. Each learning theory offers different benefits to the learners, and so the appropriate learning theory can be applied according to the need of the learners.

Table 1 below depicts Constructivist learning theory in comparison with Behaviorism learning theory and Cognitive learning theory.

Table 1. *Comparing Behaviorism, Cognitive and Constructivist learning theory*

	Behaviorism learning theory	Cognitive learning theory	Constructivist learning theory
	What	How	Why
Focus	Focused on observable, measurable behaviors	Focused on how people learn	Focused on the learners' role in their own learning
How does learning occur?	Black box - observable behavior main focus	Structured, computational	Social meaning created by each learner
What factors influence learning?	Nature of reward, punishment, stimuli	Existing schema, previous experience	Engagement, participation, social, cultural
What is the role of memory?	Memory is the hand writing of repeated experiences - where reward and punishment are most influential	Encoding, storage, retrieval	Prior knowledge remixed to current context
How does transfer occur?	Stimulus, response	Duplicating knowledge constructs of "knower"	Socialization
Types of learning best explained by this theory	Task-based learning	Reasoning, clear objectives, problem-solving	Social, vague

(Adapted from Siemens, 2006) [12]

This study follows constructivist learning theory which is based on constructivism.

Constructivism in Education

Constructivism is not a new concept, and it is widely used in many disciplines with caution. In the current study, this umbrella term is employed in the viewpoint of scholars about constructivism in education. Constructivism has its roots in the cognitive developmental of Jean Piaget and in the sociocultural theory of Lev Vygotsky. In such constructivist theory, knowledge is "constructed" by the learner, not simply acquired by a mere act of transmission of information from the teacher to the student. During past decades, many researchers and scientist had elaborated on the historical precedents for constructivist learning theory. In this view, constructivism represents the shift from education based on behaviorism, to education based on cognitive theory.

In this article, we are concerned with constructivism as a theory of learning. Hence, we are interested in how people construct meaning and knowledge. It is important to distinguish this from epistemology of scientific knowledge, i.e. the growth, development and status of scientific knowledge about the world.

The meaning of constructivism varies according to one's perspective and position. Within educational contexts there are philosophical meanings of constructivism, as well as personal constructivism as described by Piaget (1967), social constructivism outlined by Vygtosky (1978), radical constructivism advocated by von Glasersfeld (1995), constructivist epistemologies, and educational constructivism [7]-[9].

Table 2 below depicts the variation of definitions for constructivism in education.

Table 2. *Defining Constructivism*

"Constructivism is not a theory about teaching…it is a theory about knowledge and learning… the theory defines knowledge as temporary, developmental, socially and culturally mediated, and thus, nonobjective." [5]
"Knowledge, no matter how it be defined, is in the heads of persons, and that the thinking subject has no alternative but to construct what he or she knows on the basis of his or her own experience." [13]
"The doctrine itself holds that 'language users must individually construct the meaning of words, phrases, sentences and texts.'" [12]
"Constructivists allege that it is we who constitute or construct, on the basis of our theorizing or experience, the allegedly unobservable items postulated in our theories." [14]
"Constructivism is the philosophical and scientific position that knowledge arises through a process of active construction" [15]
"As long as there were people asking each other questions, we have had constructivist classrooms. Constructivism, the study of learning, is about how we all make sense of our world, and that really hasn't changed." [5]

There is no universal definition of constructivism. For some, it is a theory of learning, for others, it is a theory of knowledge, and for others still it is a pedagogical theory. The theoretical framework for this article is educational constructivism. This theory has a number of variations in terms of personal constructivism attributed to Jean Piaget and social constructivism associated with Lev Vygotsky (see Table 3 below).

Table 3. *Cognitive constructivism vs Social constructivism*

Developmental/ Cognitive Constructivism	Social Constructivism
Attributed to Piaget	Attributed to Vygotsky
Individual development is viewed as biological	Individual development is viewed as sociological
Focuses on the decontextualized individual	Focuses on the contextualized individual
Focuses on the individual's ability to make meaning from individual experience	Knowledge construction is centered on the individual's interactions with the social world
Cognitive forms develop independent of the social milieu	Cognitive forms develop as a function of social context

As stated from table 3, Piaget (1967) believed that the fundamental basis of learning was discovery [7]. However, Vygotsky (1978) believed that Piaget's emphasis was centered too closely on the internal processes of individuals, and he viewed cognitive development primarily as a function of cultural, historical and social interaction rather than of individual construction [8]. From Piaget, we acknowledged that learners construct new understandings using what they already know. They come to learning situations with knowledge gained from previous experiences. That prior knowledge influences what new or modified knowledge they will construct from the new learning experiences. From Vygotsky, we admitted that learning is active rather than passive. In such way, learners might negotiate their understanding in light of what they encounter in the new learning situation, and then their understanding can change to accommodate new experience.

While constructivism takes on different philosophical meanings with different theorists and contexts, the overarching concept hinges itself upon the nature of knowing and the active role of the learner. Thus, constructivism has vital implications for teaching [13].

Constructivist Teaching

The upcoming trends in education changed the present scenario and adopted the constructivist approach, which is moral and more focused on innovative activities and knowledge acquisition. This section presents several definitions of constructivist teaching by some typical figures in the area of language learning: Honebein, 1996; Yager, 1991; Bodner, G. M, 1986; Chaille & Britain, 1991; Brooks & Brooks, 1999, etc. [16]-[19], [5].

For instance, in Honebein's (1996) study, constructivist teaching (CT) is defined as "such a method which draws on students' existing knowledge, beliefs, and skills. With a constructivist approach, students synthesize new understanding from prior learning and new information. In constructivist teaching, a teacher sets up problems and monitors student exploration, guides student inquiry, and promotes new patterns of thinking. Constructivist teaching asks students to work with their own data and learn to direct their own explorations. Ultimately, students begin to think of learning as accumulated, evolving knowledge." [16].

According to Yager (1991), CT poses "a question to the students, who then work together in small groups to discover one or more solutions. Students play an active role in carrying out experiments and reaching their own conclusions" [17].

In a helpful survey article, Bodner, G. M. (1986) defined CT as "an approach in which teachers assist the students in developing new insights and connecting them with previous knowledge, but leave the discovery and discussion to the student groups Students are able to develop their own understanding of the subject matter based on previous knowledge, and can correct any misconceptions they have." [18].

Chaille & Britain (1991) state that CT an approach which emphasizes thinking, understanding, reasoning and applying knowledge while it does not neglect basic skills. It is based on the idea

that reamers construct their own knowledge, rather than reproduce someone else's knowledge. In their book, The Young Child as Scientist: A Constructivist Approach to Early Childhood Science Education, they also point out in a constructivist classroom the teacher is no longer the transmitter of knowledge but the facilitator of learning [19].

In Brooks & Brooks'(1999) definition, "CT" is based on constructivist learning theory which helps students to discover knowledge through active participation peer interaction, engaging material, triggering prior knowledge and high-level questioning [5].

Although many researchers have defined the term "constructivist teaching", most of them assume that teaching cannot be viewed as the transmission of knowledge from the enlightened to the unenlightened; constructivist teachers do not take the role of the "sage on the stage." Rather, teachers act as "guides on the side," who provide students with opportunities to test the adequacy of their current understandings.

From the points discussed above, the researcher found out that Brooks and Brooks' definition consists of many strengths and explicit goals, which may be suitable to the present study. Consequently, the researcher had decided to choose Brooks and Brooks' (1999) definition as the useful underpinnings of this study for understanding CT and for conducting the research.

Traditional views of teaching vs Constructivist teaching

A comparison of instruction in a traditional and a constructivist learning environment is presented in Table 4 [5].

Table 4. *Comparison of Traditional and Constructivist Instruction*

Traditional Instruction	Constructivist Instruction
Curriculum is presented part to whole, with emphasis on basic skills.	Curriculum is presented whole to part with emphasis on big concepts.
Strict adherence to fixed curriculum is highly valued.	Pursuit of student questions is highly valued.
Curricular activities rely heavily on textbooks and workbooks.	Curricular activities rely heavily on primary sources of data and manipulative materials.
Students are viewed as "blank slates" onto which information is etched by the teacher.	Students are viewed as thinkers with emerging theories about the world.
Teachers generally behave in a didactic manner, disseminating information to students.	Teachers generally behave in an interactive manner, mediating the environment for students.
Teachers seek the correct answer to validate student learning.	Teachers seek the students' points of view in order to understand students' present conceptions for use in subsequent lessons.
Assessment of student learning is viewed as separate from teaching and occurs almost entirely through testing.	Assessment of student learning is interwoven with teaching and occurs through teacher observations of students at work and through student exhibitions and portfolios.
Students primarily work alone.	Students primarily work in groups.

As stated in table 4, the traditional view of knowledge is based on the common sense belief in the existence of a real world whether we notice it or not. in the Traditional teaching method, classes are usually dominated by lecture or direct instruction. The idea is that there is a fixed body of knowledge that the student must come to know. Students are expected to blindly accept the information they are given without questioning the instructor [20] The teacher seeks to transfer thoughts and meanings to the passive student leaving little room for student-initiated questions, independent thought or interaction between students [21]. This teacher-centered method of teaching also assumes that all students have the same level of background knowledge in the subject matter and are able to absorb the material at the same pace [22]. In contrast, in the constructivist model, teachers do not need to feed students information; teachers should encourage students to use their own thought processes to construct knowledge and solve problems.

Principles of constructivism

Brooks and Brooks (1999) have stated five guiding principles of constructivism. The first is to use the problems of relevance to students in instruction. The second is that learning be structured

around primary concepts. The third is to value the students'18 points of view. The fourth is to adapt the curriculum to address students' suppositions and the fifth is to assess students' learning in the context of teaching [5].

Table 5 below shows Brooks and Brooks' five central tenets of CT [5], which parallel the five principles of constructivism and all of which were utilized as the underpinnings regarding CT throughout the current study.

Table 5. *Five central tenets of constructivist teaching*

Five central tenets of constructivist teaching (CT)		
Principles	***Tenets of CT***	***Detailed explanation***
Principle 1	Posing Problems of Emerging Relevance to Students	Constructivist teachers recognize that students must attach relevance to the content and curriculum. As students see relevance in assigned activities, their interest in learning grows.
Principle 2	Structuring Learning Around Primary Concepts: The Quest for Excellence	Constructivist teachers structure lessons around big ideas, not small bits of information.
Principle 3	Seeking and Valuing Students' Points of View	Constructivist teachers seek and value students' points of view.
Principle 4	Adapting to Curriculum to Address Students' Suppositions	Constructivist teachers structure lessons to challenge students' suppositions. When educators permit students to construct knowledge that challenges their current suppositions, learning occurs.
Principle 5	Assessing Student Learning in the Context of Teaching	Constructivist teachers assess student learning in the context of daily classroom investigations. Students should demonstrate their knowledge every day in a variety of ways.

(Adapted from Brooks and Brooks, 1999) [5]

3. Methodology

The researcher used Systematic Literature Review (SLR), a kind of the descriptive method, as a primary tool to select and review the previsou research with the aim to explore the issues related to constructivism and constructivist teaching.

4. Findings and Discussion

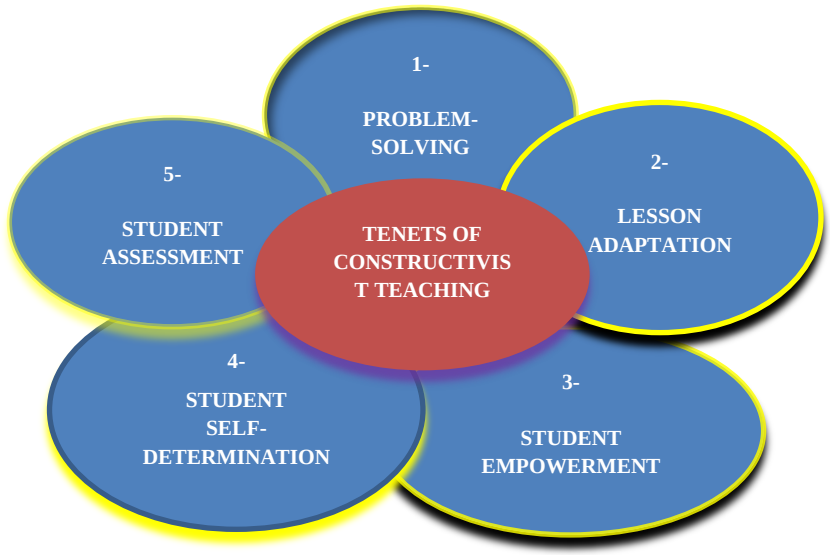

Figure 1. *Dimensions of constructivist teaching*

Review the main principles of constructivism in the context of education, we could say that constructivism emphasizes learning and not teaching, encourages learner autonomy and personal involvement in learning. Numerous researchers, educators and authors are actively engaged in using constructivist principles to design and implement new learning environments showing that theory can effectively guide educational practice.

From the above-mentioned discussion, the researcher designed the following model, namely *dimensions of constructivist teaching* and *the table of 12 characteristcis of a constructivist teacher* as the underpinnings framework in the current paper within the PhD dissertation.

Below is *12 characteristics of a constructivist teacher* as the under pinnings framework in the current paper within the PhD dissertation.

Table 6. *Characteristics of a constructivist teacher*

No	Characteristics of a constructivist teacher	Detailed explanation
1	Role model	Become one of many resources that the student may learn from, not the primary source of information.
2	Prior knowledge	Engage students in experiences that challenge previous conceptions of their existing knowledge.
3	Lesson adjustments	Allow student responses to drive lessons and seek elaboration of students' initial responses. Allow student some thinking time after posing questions.
4	Thought/ knowledge Elicitation	Encourage the spirit of questioning by asking thoughtful, open-ended questions. Encourage thoughtful discussion among students.
5	Self-contemplation	Enquire about students' understandings of concepts before sharing their own understandings of these concepts.
6	Conversation participation	Encourage students to engage in dialogue, both with the teacher and with one another.
7	Cognitive terminology usage	Using cognitive terminology such as "classify," "analyze", and "create" when framing tasks.
8	Student autonomy	Encourage and accept student autonomy and initiative. Be willing to let go of classroom control.
9	Debate engagement	Engage students in experiences that might engender contradictions to their initial hypotheses and then encourage discussion.
10	Original materials	Using raw data and primary sources, along with manipulative, interactive physical materials.
11	Knowledge acquirement	Don't separate knowing from the process of finding out.
12	Explanation requirement	Insist on clear expression from students. When students can communicate their understanding, then they have truly learned.

5. Implications and Conclusion

In the constructivist classroom, the teacher's role departs from that of dispenser of information to facilitator of information. They design classes that promote discussion, active learning, and reflection, and provide modeling, coaching, and scaffolding to students when required. Learning activities require full student engagement in practical, real world tasks and allow opportunities for students to reflect on their learning experiences [23]. In such case, teachers do not need to feed students information; teachers should encourage students to use their own thought processes to construct knowledge and solve problems. The key to learning, in a constructivist model, is for the learner to find multiple ways to link new knowledge or meaning to previous cognitive experiences. It's undouted that constructivist teaching enables schools to promote higher-level learning outcomes by encouraging their students to construct their own meanings and interpretations [24]. In addition, it assumes that all students can and will learn as they acquire and build their own personal knowledge. Also, it gives teachers more discretion to construct their own meanings and interpretations in order to improve classroom teaching and learning.

Constructivist teachers focus more on learning through activity, rather than learning from textbooks. The teacher will make an effort to understand their students' preexisting conceptions and use active techniques, such as real-world problem solving and experiments, to address the students' conceptions and build on them. In a constructivist classroom, teachers encourage students to question themselves, their strategies and assess how the various activities are enriching their understanding. Students become expert learners in actively constructing knowledge instead of reproducing a series of facts.

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