

# *Encouragement of heuristic education to develop students' learning talents*

**Zhenyuan Zan**

*City University Malaysia, Selangor, Kuala Lumpur, 46200, Malaysia*

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**Abstract:** As we move from the "era of core knowledge" to the "era of core literacy", the vision of education and teaching activities has been expanded to cover all aspects of human existence and development, with schools assuming the main role of education and teaching. In inspirational teaching, teachers master the basic principles of knowledge and its articulation, making it easy for students to understand new knowledge and achieving the purpose of developing students' thinking and improving their learning ability. Teachers should be based on the old and new knowledge contains the same factors of how much, cleverly set up the inspiration point, from shallow to deep. At the same time, "era of core literacy" ensure that students develop the ability to reflect on all three, guide them to logical reasoning and inductive analysis, and enable them to explore problems with multiple variations or solutions, rather than just focusing on getting the right answer.

## **1. Introduction**

With the development of society, inspirational and supportive communication methods show more vitality and superiority compared to indoctrination education under the wave of new curriculum reform that advocates quality and innovative education. Some of the necessary elements for building and maintaining constructive relationships include trust, standing by them, respecting everyone at all times, taking responsibility and leading them to achieve, and demonstrating that it is possible to listen to and accept what students have to say <sup>[1]</sup>. Enlightening and supportive affirmation and guidance of an individual's mental behaviors of knowing, feeling, meaning, and doing can easily enable the culture to build on inheritance. It is conducive to teachers' respect for students' independence and guiding this independence in a positive direction, fostering students' self-striving spirit and taking the initiative in learning to acquire knowledge and improve their abilities.

## **2. Content**

### **2.1 Teacher factors**

Educators must constantly acquire new knowledge and improve literacy to set a good example for their students<sup>[2]</sup>. Teacher literacy is the sum of ideas and qualities embodied in teaching and learning activities, which determines teaching effectiveness and influences students' physical and mental health development. Teacher quality comprises five basic elements: educational concepts,

professional ideals, knowledge structure, teaching ability, and teaching behavior.

#### *Teachers' concept of education*

In some college classrooms, there are phenomena that teachers speak alone, students are unresponsive, and the classroom atmosphere is heavy, which may be caused by teachers' backward educational concepts. Teachers in the classroom ignore students' subjectivity, the nature of interaction with students, and the one-sided pursuit of behavioral interaction, resulting in a single mode of teaching, the formation of duck education. Therefore, teachers need to constantly update the concept of education, be student-oriented, and understand the nature of teacher-student interaction in order to create an equal and interactive learning environment so that teacher-student interaction plays a maximum role.

#### *Teachers' knowledge structure*

Knowledge structure is the basis for teachers to deal with teaching materials, create situations, and design interactions. Lack of knowledge will lead to teachers being unable to use the teaching materials flexibly, thus failing to create a good interactive environment and neglecting deep cognitive inspiration and supportive communication with students. Qualified teachers should know the subject matter, pedagogy, and psychology and the contextual knowledge needed to achieve the purpose of teaching. Teachers who are lifelong learners will be able to equip themselves with the above knowledge and be able to organize their teaching activities flexibly to promote the holistic development of students further.

#### *Teachers' ability to monitor teaching*

Teaching monitoring is not the monopoly of the classroom by the teacher but refers to the ability to continuously evaluate, give feedback, regulate, and control the teaching activities throughout the teaching process to ensure the success of classroom teaching. It is concretized as the teacher's behavior of flexibly regulating the teaching objectives, contents, links, pace, atmosphere, time, and other factors of classroom teaching according to the classroom's communication to make the classroom run smoothly.

#### *Teachers' Non-verbal Behaviour*

Teachers' non-verbal behaviors shown in their interactions with students can convey evaluative information, express teachers' feelings, and strengthen the connection between teachers and students. Educational researchers have mainly studied three types of non-verbal behaviors teachers use in the classroom: voice, eyes, and gestures. One study found that when people communicate, conveying information through vocal signals accounts for 38% of non-verbal behavior<sup>[3]</sup>. Changes in the teacher's voice will make it easier for students to catch the focus of classroom content; eye attention will attract students' attention and make them respond more.

## **2.2 Student Factors**

Students are encouraged to fully express their ideas, opinions and learning difficulties, to promote interaction among peers, and to incorporate manual activities into the curriculum as much as possible[4]. In classroom teaching, students' friendships with each other will stimulate enthusiasm for communication and make the classroom lively. Sincerity and fraternity among peers are more conducive to opening up and speaking freely among members. Forming a learning community, working in groups, and participating in classroom activities together is easier. Under the guidance of teachers, students can be more adept at interacting with their peers and gradually socialize in the interaction process.

#### *Peer factor*

Peer relationships greatly influence students' attitudes and behaviors in classroom interactions, which may be positive or negative. Individual adolescents are influenced by what their peers do or

say and what they imagine their peers do or think<sup>[5]</sup>. It has been noted that many primary and secondary school students can be under strong pressure to conform themselves to others. For example, a student who is very confused about a question in class may be afraid to raise his or her hand to speak up for fear that other students will laugh at him or her for being stupid.

#### *Group cooperation factor*

Cooperative group learning is an effective way to guide students to learn actively, which can bring into play the role of the main body of the classroom. In group work, group members can improve their enthusiasm for discussion and superior expression of views and cultivate the spirit of teamwork. Some studies have shown that allowing students to choose learning partners can stimulate learning enthusiasm and improve learning motivation. Also, working in groups makes students aware of why certain aspects of the curriculum are non-negotiable<sup>[6]</sup>.

### **2.3 Teaching mode factors**

#### *Flexible application of teaching modes*

In traditional teaching, teacher-student interaction is mainly one-way verbal interaction, where the teacher talks and the students listen, and question-and-answer interaction is also relatively rare, with little discussion and inquiry activities between students. In the current teaching process, there is a random selection and mixing of teaching modes to change the teaching behavior of classroom interaction. There has yet to be substantial progress in teacher-student interaction. Therefore, the flexible application of teaching modes under the guidance of inspiring and supportive teaching concepts builds a relatively stable teaching structure and procedure. In the actual classroom teaching process, teacher-student interaction and the teaching structure vary according to different teaching modes.

#### *Collaborative learning environment design*

Teaching through the design of the discussion further deepens the construction of the learning theme to give full play to the advantages of individual independent learning. The entire collaborative learning process is organized and guided by the teacher, and the teacher raises the questions for discussion. Collaborative learning environments are usually designed in two different ways: either the topic of learning is known in advance, or the topic is unknown. For example, in high school language classes, under the multimedia network teaching environment, students can write essays or proposition essays on the spot and then use the multimedia classroom network in the second half of the classroom to conduct class-wide comments and exchanges.

### **2.4 School education media factors**

Visual media refers to the educational media acting on human visual organs, which can be divided into projected visual media and non-projected visual media, such as pictures, slides, projections, etc. -Auditory media refers to the educational media acting on human auditory organs;

Auditory media refers to the educational media that act on human auditory organs, such as spoken language, tape recorder, radio, etc.;

Audio-visual media refers to educational media that act on human visual and auditory organs, such as film, television, computer, etc.;

Interactive multimedia refers to educational media that act on multiple senses and have human-computer interaction. Such as interactive whiteboards, also known as electronic whiteboards, interactive whiteboards, electronic interactive whiteboards, and digital whiteboards, etc., which have both traditional media (blackboards, chalk, etc.), can be written on it with a special positioning pen or even directly with the finger, but also with computers and projectors composed of network multimedia functions.

Educational media is a tool for storing and disseminating educational information, and the construction of information technology hardware facilities for classroom teaching brings convenience. Information technology in the mathematics classroom can increase the capacity of the classroom so that classroom teaching is more compact; it can save time on the board, especially it can make static content movement and abstract content visualization; the teaching effect has generally improved. If the teaching effect is to be improved, teachers should find ways to make the stimulation of educational media to students profound, strong, and lasting. The combination of various educational media should take into account the basic elements such as teaching content, teaching objectives, students' receptive state, and objective conditions. The variety of educational media determines the diversity of its combination. Teachers should have a general understanding of the basic situation before the class, such as the types of media available, the state of the equipment, the teaching function and application characteristics of various media, the state of the students, and so on, so as to have a clear idea.

### 3. Cases

In secondary school geography class, in order to make students understand the concepts and meanings of the lines of latitude and longitude, a teacher said, "In the vastness of the Pacific Ocean, an ocean liner had a serious breakdown, and in the case of self-help to no avail, the captain picked up the phone and asked for help from the headquarters, if you were the captain, what would you say?"

A student calls, "Hello, headquarters, we're in trouble, come and help us."

"This is headquarters, please report your position." The teacher pursues the question.

The student hesitated and replied in a whisper, "We are in the Pacific Ocean."

His answer caused laughter, and the teacher asked, "Why are the students laughing?"

"The Pacific Ocean is so big, where can we find it?" The student replied.

"Yes, how can rescuers find a ship in trouble in the Pacific Ocean?"

"They should report the exact location of the ship."

The teacher then threw the question "how to determine a certain location on Earth" into the discussion. During the discussion, students went from exploring how to describe their seats to street numbers, from seat numbers on film tickets to the plane coordinate system.

In this way, the concepts and meanings of lines of latitude and longitude and latitude grids were understood by the students.

In this case, the teacher threw the key issues of teaching to the students for discussion by setting up problematic situations in which the students mastered the knowledge and enhanced their abilities, and the series of logical questions is the main feature of heuristic teaching. The principle of heuristic teaching refers to the fact that in teaching, teachers should acknowledge that students are the main body of learning and should actively mobilize their learning initiative to guide students to establish independent thinking, active exploration, lively learning, and exercise problem-solving skills. The entire teaching process is guided and controlled by the teacher. The questions must also be based on student's prior knowledge and experience in order for students to find a landing point for reflection and a framework for meaning formation. The questions must also resonate with the students, who, by actively thinking about the questions posed by the teacher, give full play to their subjectivity, develop their thinking skills and learn by example so as to achieve the purpose of acquiring knowledge and developing competence.

*Learning environment creation is something that teachers should consider:*

iStrengthen the purpose of learning education, and mobilize the initiative of students to learn.

iiInspire students to think independently and develop their logical thinking skills.

iiiDeveloping independent problem-solving skills through hands-on learning.

ivDevelop democracy in teaching and learning.

## 4. Conclusion

With the development needs of the modern economy, students must not only have a solid knowledge base but also pay more attention to the mastery of general principles, scientific attitudes, and methods, independent access to new knowledge, knowledge transfer, the ability to constantly adjust and update the structure of their own knowledge and qualities, which inevitably requires us to get rid of the traditional teaching theory of the boundaries, re-establish a new teaching ideology, to create a new teaching environment focused on the students and the students. The development of intelligence is fostered by inspirational and supportive communication. Research has shown that students are less likely to miss school, engage in disruptive behaviors, etc., in a stimulating and supportive interconnected school environment. Inspirational and supportive teaching questions should be relevant to students' lives, understandable, and relevant to students' interests in order to capture their attention better. As the Chinese saying goes: "It is better to teach a man to fish than to give him a fish" Guiding students to develop their own thinking about learning and developing a learning method that suits them is the key to keeping students highly interested in learning.

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