MINISTRY OF EDUCATION AND TRAINING
Hanoi National University of Education

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APPLYING THE INTERACTIVE VIEWS ON TEACHING BIOLOGY GRADE 9 AT SECONDARY SCHOOL

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INTRODUCTION

1. Reasons for choosing the topic

At present, innovation in teaching methods is implemented in pedagogical integration where its core thought is to develop its capacity. Teaching methods from the point of view of capacity development not only focus on activating students intellectual activity, but also addressing the problem-solving capacity associated with life and career situations; At the same time associate intellectual activity with practice, practice. The teaching viewpoint to achieve this requirement is the learner-centered teaching. In student-centered instruction, the primary concern is to prepare students for adapting to social life, respecting the student's purpose, needs, abilities, interests, and academic interests. .

The point of view learner teaching center is not a new problem in the renovation of teaching methods, a lot of positive teaching methods are studied and applied to help people learn to actively dominate knowledge. However, this research method can not be applied effectively to any audience learners, the study of academic ability, thinking ability, the psychological and physical characteristics, especially the learning style of the learner so that the use of active teaching methods to suit each object learners is essential in order to achieve optimum efficiency in the process of learning here. On the basis of the innovation-oriented, recently in our country there have been many research projects are carried. On that way interactive pedagogy is a teaching approach by the scientists, interested educators researches. With this teaching approach will find ways of teaching Biology effectively. With the reasons above, we choose research topics ***"Applying interactive pedagogical perspective on teaching biology at Secondary school grade 9"***

2. Purposes of the research

Research theoretical basis and practical learning interactive pedagogical perspective, using this perspective on teaching Biology 9 at Secondary School suitable to their learning styles of students in order to improve teaching quality.

3. Research object, research subject and scope of the research

- Research object: interactive pedagogical perspective and the process to apply this perspective on teaching high school biology class 9 junior suit the learning styles of students
- Research subject: The biology at secondary school grade 9
- Scope of the research: part genetics and mutation-Biology 9 secondary school.

4. Scientific assumptions

If construction were the principles and processes apply interactive pedagogical perspective in teaching biology grade 9 suit the learning styles of students, they may improve the quality of teaching biology grade 9 in high school junior.

5. Research tasks

5.1. Study overview of the situation of applying interactive pedagogical perspective in teaching in the world and in Vietnam.

5.2. Research theoretical basis of interactive pedagogical perspective to make the principles and processes of teaching standpoint interactive pedagogy in line with the learning styles of students in teaching Biology school 9 secondary school.

5.3. Building a system of teaching principles in view interactive pedagogy to apply to teach secondary school Biology 9

5.4. Construction of the teaching process in view interactive pedagogy in line with the learning styles of students in teaching Biology 9 secondary schools.

5.5. Research and factual basis of the application of interactive pedagogical perspective consistent with the learning styles of students in teaching in general and teaching Biology 9 secondary schools in particular.

5.6. Design activities 9 Secondary Biology teaching standpoint interactive pedagogy in line with the learning styles of students.

5.7. Pedagogic practice: to test the feasibility and effectiveness of the scientific hypothesis.

6. Research method

6.1. Theoretical research methods: Research the theoretical foundations of the topic through legal documents, monographs, articles published in prestigious journals, dissertations related to the topic.

6.2. Practical Research Methodology:

- Conduct a survey on the teaching and learning situation of teachers and students and investigate the learning styles of students.

- Method of investigation: observation (teaching and learning activities of teachers and students, teaching and learning conditions of teachers and students), research of teachers' products (plans and teaching plans) and students (notebooks, rating results), chatting, interviews, discussions with teachers and students.

6.3. Experiment methods:

- Experimental use of the pedagogical teaching process in accordance with the learning style of students to teach some articles in the program of nine secondary schools to evaluate the feasibility and effectiveness. The result of the topic.

- Experimental sites are some secondary schools in Hanoi. Coordinate with a number of high school teachers in the schools as collaborators, to exchange consultancy and conduct experiments.

- Experimental and control classes were randomly selected. Experimental and control arrangements were conducted in parallel. Where the experimental class is taught from an interactive pedagogical perspective. The traditional teaching method of the control class.

6.4. Mathematical statistical methods: Use Excel to analyze experimental results.

7. New contributions of the thesis:

7.1. Formalized theoretical basis and practical follow interactive pedagogical perspective on teaching biology.

7.2. Develop systems teaching according interactive pedagogical perspective on teaching biology principles consistent with the students style to apply to teach Biology 9 secondary schools.

7.3. Establish procedures in line with interactive pedagogical perspective on teaching biology in students style Biology at Secondary School Grade 9.

7.4. Design activities Biology 9 teaching follow suit interactive pedagogical perspective on teaching biology to put to test and evaluate the effectiveness of the application of interactive pedagogical perspective on teaching biology.

8. The structure of the thesis

Besides the introduction, conclusion and recommendations, references and appendices, presented thesis consists of 3 chapters:

Chapter 1: Basis of theoretical and practical topics

Chapter 2: Applying interactive pedagogical perspective on teaching biology on Secondary School Biology 9

Chapter 3: Experimental pedagogy

Chapter 1
THEORETICAL BASIS AND PRACTICE OF THEMES

1.1. Research history of applied on interactive pedagogical perspective on teaching biology in the world and in Vietnam

1.1.1. On the world

Interactive theory was officially born in the 70s of the twentieth century with the findings of the authors like Guy Brouseau, Claude Comiti ... University Institute to train teachers in Gremnoble (France).

Most recently, the research centeral educational research of international (CERI) - Paris, the team of two educators Canadian Jean-Marc and Madeleine Roy Denomne researched and successful experimental direction teaching new organization in pedagogical activity called "interactive pedagogy". The above analysis shows that the authors have confirmed the basic elements of interactive pedagogical perspective the Teacher - Learner – Teaching environment, the function of each factor and to clarify the elements of the teaching .

1.1.2. In Vietnam

Thought interactive pedagogy is Jean - Marc Denomme and Madelenie Roy was first introduced in Vietnam in 2000. In fact, in the pedagogical documentation of the Soviet Union, Germany and Vietnam in the past, it has been much talk interactive Teaching - Learning.

Recently, many authors have studied the concept in many different subjects from primary, secondary, college-university education and management, but in general, so far the research on the application of interactive pedagogical perspective on teaching biology in teaching specific subjects; especially for the subjects Biology and Grade 9 learners are students currently do not have a secondary school studies mentioned in interactive pedagogical perspective on teaching biology applying the specific contents of the subject.

1.2. Basis for argument

1.2.1. Interactive pedagogical perspective

1.2.1.1. The basics

Interactive pedagogical is approaching teaching activity, which emphasizes the relationship between three factors dialectical learners, teachers and environmental education activities.

According interactive pedagogical perspective on teaching biology, learners are actors involved in the process of acquisition of new knowledge with neural apparatus (Apparatus school) around. Instructor who is responsible for leading the learner with knowledge and his experience, the basic function of the teacher is to help students learn and understand. Environmental factors are directly involved to the process of teaching - learning, affecting teachers and learners rather than merely the place where active teaching - learning; Learners and teachers have to adapt to environment.

1.2.1.2. The birth of interactive pedagogical perspective

Interactive pedagogical perspective by 2 educators and Madelenie Denomme Jean-Marc Roy (Canada) construction and development. Two grandparents Denomme is senior lecturer at the University of Québec Synthesis named Troi - Rivieren. Two grandparents Denomme proposed interactive pedagogical perspective on teaching biology theory to solve the situation on 1 fundamentally and scientifically, in order to improve the quality of learning in schools.

Based on psychological theories and research findings about the structure of the nervous system and the functioning of the human brain, such as a natural scientific basis of the study; the nature of human learning, based on the achievements of cognitive neuroscience research process of acquisition of knowledge in whom these authors have built one teaching theory, it is reasonable interactive pedagogical perspective on teaching biology theory.

1.2.1.3. Theoretical basis of interactive pedagogical perspective

** Philosophical basis*

Derived from the philosophical point of view, says all things in the objective world have intimate relationships with each other, always exist, campaigning in relationships of mutual coordination. In a certain aspect, teaching process is an interactive process between the two entities: the subject training activities (teachers) and active study subjects (role) in the learning environment in order to implement the objectives teaching .

** Psychological Basis*

The twentieth century witnessed a strong development of psychological theories such as Gestalt theory, cognitive theory of tectonic, Vugotxki theory ... These theories not only confirmed the role for the development orientation psychological sciences in the present and the future but also the psychological basis for the formation of teaching model. Main psychological theories are the basis for the introduction of interactive pedagogical perspective on teaching biology. Interactive pedagogical perspective on teaching biology birth has clarified the biological basis of human factors and special learning environment is happening to teaching and learning activities.

** Biological Basis*

According to the association theory, the formation of the idea according to reflect neural mechanism (D. Hartley) and I. P. Pavlov called mechanism that is the way of the creation of a temporary nervous system. The main point of the platform to explain the biological basis of interactive pedagogical perspective.

The apparatus is studying the nervous system, it is the basis of learning in every human being, and here only considered in view of the nervous system activity without studying biological standpoint. Thus it is possible to generalize diagram neuroscience approach in teaching - learning as follows (Figure 1.1):

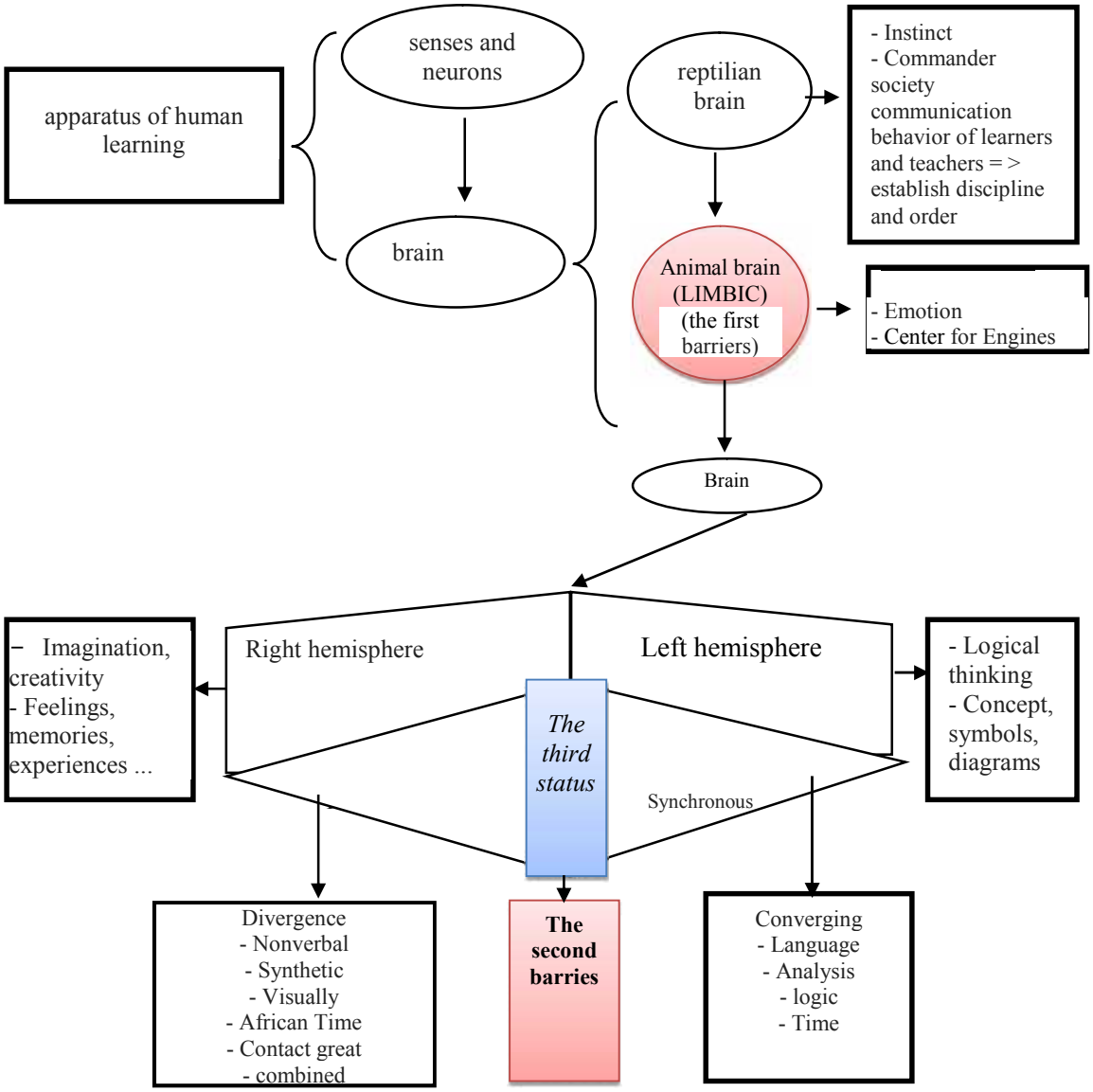

Figure 1.1. Diagram of approach to neuroscience in teaching - learning

Through such approaches, we identified: to achieve high efficiency of teaching, the objective is to help the school teachers overcome two barriers of cognitive processes, such as the Limbic - excitement centers (the first barrier) and "status T" (the second barries) .

1.2.2. Teaching model

1.2.2.1 . Concept of teaching model

According to the dictionary educate, "teaching model" is the kind of model to guide the construction of a program, the selection of materials and pedagogical support teachers in their tasks.

Model teaching is considered a theoretical model reflects the basic components of teaching and the relationship between them as goals, content, methods of teaching, teaching organizational forms, checks evaluation... Or express composition, structure and basic relationships of teaching and learning activity

(stimulation of the motor learning study, organization and control of interactive pedagogy, assessment and adjustment teaching activity...) is performed in an environment defined.

1.2.2.2 . Teaching models

** Notes to associate and form the teaching model associate psychology*

Association theory appears very early, is considered the psychological theory of knowledge formation is made under the association of sensations, images, experience had. According to the association theory is the perception of the world around him is starting the senses: visual, auditory, tactile, olfactory, taste (Aristotle) and each provided a kind of sensory information with the level of different shades, but when such information is linked together they will be described by a common name to refer to an object (G. Berkeley).

** Gestalt theory and model teaching comprehension*

Representative for Gestalt theory is the psychologist as M. Werthemer (1880 - 1943), K. Koffka (1886 - 1941), W. Kohler (1887 - 1967), K. Lewin (1890 - 1947). The study of these authors has been to discover the relationship between the objective to stimulate the formation of a full psychological structure. Great contribution of Gestalt theory of learning is discovered rule structure formed awareness, perception rules, understanding and resolve the situation in learning.

** Theory of L.X.Vugotxki and interactive model developed teaching*

From the second half of the twentieth century, when behavioral psychologists revealed many shortcomings, the L.X.Vugotxki thesis on the formation of cultural and psychological function in humans associated with the cultural conditions - social specific increasingly wide applications in teaching and became the basis of psychological interaction model developed teaching - learning a modern direction.

Through analysis of theoretical models and apply them in the teaching showed the relationship of 3 components during teaching including teacher - learner – teaching environment, with highly theoretical elements, may theoretically enhance other elements, but taken together are referred to the role of each factor as well as the interaction between them in the system.

1.2.2.3. Teaching model structure under interactive pedagogical perspective

Interactive pedagogical perspective built based on the study of human nervous system and the characteristics of the students' education. Teaching system includes 3 basic elements and the interactions between them make up the effectiveness of the teaching. It is the learners, who teaches and Teaching environment.

According to Jean-Marc Denomme and Madelenie Roy, in teaching , learners participating role, initiative, excitement and responsibility; teachers have a role planning, guidance and cooperation activities; environment interaction to both the other two elements. Interaction is emphasized in particular in the two-way relations SPTT between environmental learn- here- people, three agents are always related to each other so that each agent activity and response under the influence of two agents other:

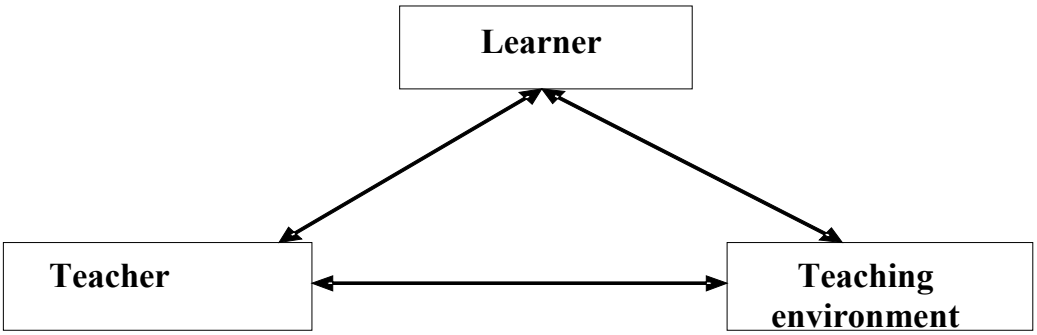

Figure 1.2. The relationship between the three actors interactive pedagogical perspective

We believe that the Figure 1.2 does not show the interaction between the learner and the learner and between the learner and the instructor, as well as the learner and the educator with the knowledge in the environment. The source of knowledge here is both the driving force and the result of the interaction process, which we call "learning object". Therefore, we propose the interaction diagram between the subjects of the teaching process as follows:

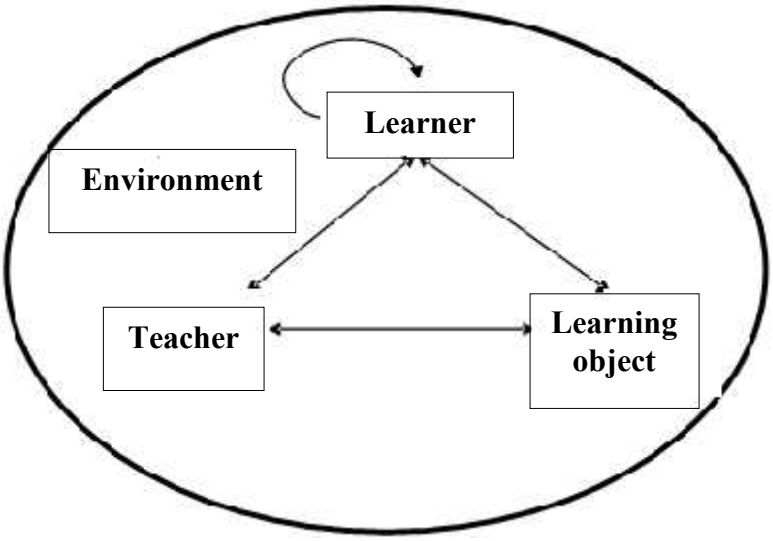

Figure 1.3. The relationship between the elements of teaching in an interactive pedagogical perspective

In this diagram, the encompasses all the factors that influence the teaching process, such as goals, teaching methods, teaching aids, teaching, assessment, Education of the school and the socio-economic environment of the community. Element Learner is the subject of the teaching process, the use of interactive pedagogical perspective is for Learners to use their "machine learning" most effectively-it is the most effective exploitation of the Characteristics of the learner's learning style so that they maximize their strengths and gradually overcome the limitations of their learning styles; At the same time, all other factors are geared toward optimizing the effectiveness of each learning style, focusing on interactions between other elements and the learning styles of learners. In this approach, teaching can refer to the interactions between learners, teachers, learners and the environment - in which the environment is a factor that encompasses all The other factor; Even,

the teacher and the learner are also the learner's environment. Accordingly, interactions in teaching can emphasize three main types: learner-to-learner interaction, learner-learner interaction and teacher-teacher interaction, and environmental learners.

** Interactive Learners - Learning Object*

This type of interaction is manifested by self-study, self-studying learning materials. This interactive process can be done at any time, anywhere, such as at home, at the library, in the classroom, etc. In the process of teaching as required by the teacher or the learning needs of the student, Students study static texts (textbooks, pictures, magazines, etc.) or animated materials (video clips, virtual experiments, etc.) related to the content of the study.

** Interact learners - learners*

Through an interactive process, each student will know how to control their cognitive processes, raise yourself up a new perspective. Therefore, when the organizational interactions during teaching pedagogy, teaching people to control the direction of movement of all forms of interaction in this interactive relationship, only when the learner actively exchange, share, even even compete with each other in school, then when did they actually learn and that is the success of the teaching.

** Interactive learner – teacher*

In this type of interaction, the teacher is the organizer, driver training activities, and the school is self-organizing, self-control of their own learning activities. The learner is actively, actively implementing and participating interact with teachers to find motivation, seeking direction to solve the problem by yourself or learning tasks. Interaction between teachers and learners during teaching mainly aims to help learners enhance motivation and maintain interest in learning, creating opportunities and conditions to develop the ability to explore, to discover for learners.

** Teaching environment*

The environmental impact of the two positive trends and negative. If the environmental impact is positive, then the senses of learners are placed in a strong activation status and learning process happens in a positive, proactive. Learners feel supported, encouraged activities ... However, the environmental impact of learners to a negative direction, the learners feel inhibited, lack of confidence in terms of psychology, lack of information, or source of information in the process of assimilation of new knowledge. In the teaching , school teachers and affected not only the environment but also on improving the environment back to serve, improve the quality of their own work, teaching and learning activities.

Thus, special interactive pedagogical perspective increase the value of the relationship of the three interacting agents learners, teachers and the environment. The participation of the three agents diversity is the source of the dynamic relationship between them, which is also the most characteristic elements of interactive pedagogical perspective. And in these fundamental factors, we pay particular attention to the Learner factor, which studies and studies the learner's learning style, and suggests measures to influence the department “machine learning" most effectively.

1.2.3. Learning styles

1.2.3.1. Learning styles

According to Vietnamese dictionary, style is the way, the way of living, working, working, treat the individual make up what's a person or a certain class of people (Royal Coffee, 1992).

Through analysis and based on the research objectives of the research, we chose to define "specific characteristics learning style is taking advantage, the relative stability of individuals defined by receipt, handling and storage and feedback in the learning environment" as a basis for research.

1.2.3.2. The model Learning styles

The term learning style model is mentioned a lot in the research world, for example, models of Kolb learning styles, learning styles model of Witkin, model of Dunn learning styles and Dunn, ...

According to research by Coffield, now there are 71 models of learning styles have been developed and published, these studies focus on the following five groups of problems (Coffield, 2004). Through analysis and evaluation 5 groups learning styles model we selected group learning style model based on the advantages of flexibility in learning, which is based on the classification results of the two learning styles Honey and Mumford authors do research facility.

Models of Honey and Mumford Learning styles

Honey and Mumford 1992 Learning styles defined as "a description of the attitudes and behavior through which Learning styles term model. Four Learning styles described including style activities (Activist), the style reflects the (Reflector), style theories (Theorist) and actual style (Pragmatist). Learning styles learners have different characteristics, there are different ways of learning. Characteristics of the study correspond to the different Learning styles facility is laying the foundation for the design of teaching activities to maximize the advantages of each Learning styles of learners, which helps students self- knowledge dominate.

1.3. Practical basis

To understand the status of teaching and learning in secondary schools, we have conducted research using a variety of methods such as observation (teaching and learning activities of teachers and students, teaching and learning conditions of teachers and students), teacher research products (plans, lesson plans) and students (notebooks, results of classification), investigation (chat, interviews and discussions with teachers and students) at the higher secondary school in Hanoi representing the inner city and the suburbs.

We conducted a survey by opinion polls combined with observations, exchange, interviewing and researching the education of both teachers and students. The survey issues we are interested in the following situation:

1.3.1. Investigation on the learning styles of students

To learn Learning styles, we used a questionnaire survey modeled Honey and Mumford 's Learning styles. Through a survey on 510 students of secondary schools in Hanoi we found: the majority of students tend to excel on 1 in 4 Learning styles (accounting for 86.27 %), the remaining 1 part Learning styles mix (13.73%).

Through the study of Learning styles situation, the teachers need to care about their characteristics to apply teaching method suit each style group, thereby arousing the strengths and limitations of points requirements, helping them learning the most effective .

1.3.2. Current situation in secondary schools according interactive pedagogical perspective on teaching

1.3.2.1. Teachers understand about interactive pedagogical perspective on teaching

The survey results showed that: Most teachers had never heard of "interactive pedagogical perspective on teaching", this percentage accounted (68.55%), few had heard (26.61%). This proves that this view has not been common use in teaching. Among the teachers have heard this view, the source of information is mainly provided through the Internet, books, newspapers, magazines or through seminars and trainings.

1.3.2.2 . The interest of the student teachers to learning styles

When asked about the interest of the student teachers to Learning styles, results showed that the majority of teachers are not interested in teaching learning style. In particular, according to the teaching of learning styles affected greatly by causes from teachers, students and the teaching environment. This is why teachers are not interested in adopting the model according learning styles in teaching. In other words, in the teacher is not really interested in the learning styles should not promote and exploit the available potential of learners, it also restricts the building of effective learning environments of both teacher and student.

1.3.2.3. Means teaching response process according interactive pedagogical perspective on teaching

To assess the status of use in teaching medium secondary schools at present, we have carried out investigations and surveys on the subject teachers about the level of use and evaluate the necessity of the means of taeching. The results show that: the use of computers and electronic lectures are common in today's teaching. But the use of this medium in the teaching still concentrated in the majority of young teachers. However, through interviews we found, the use of smart board is still limited. This situation mainly stems from the actual conditions of the school, can not yet equipped so teachers have access to and use.

1.3.2.4 . The use of methods and techniques of the teacher

To learn the use of methods and techniques in the teaching, we obtained results: most teachers use a variety of teaching mehod process. Wherein the method most used questionable methods, presentation, visualization, and solve the problem mentioned, teamwork. However, the modern Administrtive teaching method and rarely used, focusing only used by young teachers.

Chapter 2

APPLYING INTERACTIVE PEDAGOGICAL PERSPECTIVE ON TEACHING BIOLOGY AT SECONDARY SCHOOL GRADE 9

2.1. Analysis of the program structure Biology 9

The program is structured in a way that moves from phenomena to nature, in accordance with the cognitive psychological characteristics of secondary school students. First, students are exposed to genetic phenomena associated with reproduction. Students get familiar with Menden's genetic research methodology to discover the validity of the phenomenon by experiment. However, Biology 9 is limited to Menden's hybrid ancestry. Menden's crossbreed experiments have helped the author discover the separation law and the independent decomposition law, which are Considering laying the foundations for genetics.

By analyzing the characteristics of student learning styles and the content structure of the "Genetics and Variations" section, we find that students with different learning styles have different learning styles, approaches and occupations. Different forms. From the differences in learning styles, teachers conduct content-based learning activities in different ways so that students can maximize their learning style and strengths simultaneously. Through interaction with other elements of the teaching process, students will overcome weaknesses in their learning styles. Knowledge of "Genetics and variations" is difficult, very abstract, generalizable and highly applicable, so students are often difficult to remember, understand and forget quickly. In order for students to understand such abstraction issues, it is important to classify content appropriately for each type of learning style when using an interactive pedagogical perspective in teaching "Genetics and Mutation" of the Biology 9.

2.2. Principles apply to teach Biology interactive pedagogical perspective on teaching biology 9 secondary schools

In accordance interactive pedagogical perspective on teaching biology, but to ensure the stock teaching diencon principles emphasize the main principles derived from the application of this view in the teaching as ensure the thorough DH targets, ensuring the accuracy of internal teaching solution, ensuring conformity with the students, ensure the interaction between three factors Teacher - Learner – Teaching environment and ensure application of methods and techniques appropriate to each teaching model.

2.2.1. Principle of ensuring the dialectical relationship between teaching and learning capacity development goals

In addition to the objective of knowledge, teaching today must also lead to the formation and development of competencies for learners such as self-learning capacity, problem solving ability, communication capacity. , The design of interactive pedagogical teaching activities in 9 junior high school biology teaching in accordance with the student learning style must be geared towards ensuring not only achieving the goal of achieving Forming, training skills and attitudes, but also ensure that the learner is learning by the field, to develop the capacity for learners.

2.2.2. Principle of ensuring the dialectical unity between the active, self-conscious and independent role of the student with the leading role of the teacher in the teaching process

This principle requires that the forms of teaching organization must create excitement, the positive mind works so that the student body is always in an interactive state, which can be interactions between students - Homework Students, pupils, teachers with guidance, counseling, orientation of teachers.

Interactive pedagogical perspective on teaching biology special attention to the relationship between Teacher - Student - Environment through interactive teaching: Teacher – Student, Strudent – Strudent and Teacher, Student – Environment. In particular, as the subject of the teaching, who learned up to facilitate the effective use "machine learning". Therefore, when implementing the process according interactive pedagogical perspective on teaching biology teachers need to understand the audience learn, from the design environment that best suits teaching majority parts students in class. Environment teaching which carries out the interaction between students with role must fit in order to reach the same destination that is effectively the students' education. If learning environment mismatch will affect interaction in learning. Therefore, the principle of ensuring the interaction between the three factors Teacher - Learner – Teaching environment is a prerequisite for designing activities according interactive pedagogical perspective on teaching biology.

2.2.3. Principles of ensuring the appropriateness of teaching content and learning styles of students

From the analysis of the program structure and characteristics of the content of the curriculum is shown in the curriculum, standard knowledge skills. We found that the content of Biology 9 is concerned with solving the relationship between the basic knowledge system and the life and work of production; Implementation of integrated labor and technology education on the basis of the needs, social and desirability of students; Ensuring both the performance of the task of equipping the student with the most common education, enabling them to have the opportunity to study and, at the same time, the task of forming in them the capacity to engage in practical activity. On the other hand, each student has different learning styles, leading to a different approach to knowledge acquisition. Therefore, this principle requires the categorization of teaching content, thus suggesting ways to influence the appropriateness of teaching content with each type of learning style of the student, so that In the process of teaching, each student develops strengths in his or her learning style and overcomes the limitations of the learning style. For example, learning the conceptual content, definition or comment, explaining genetic laws is a strong point with reflective and argumentative learning styles but is a weakness of learning style. Active and practical. When learning this content, teachers organize students to practice or use practical contact, can promote the strengths of practical and practical learning style.

2.2.4. Applying the principle of ensuring appropriate organizational forms of teaching to the learning styles of students

Learning styles of students is quite diverse as intellectual capacity of students is different, so the process of teaching, especially teaching activities should be

designed to suit the learning styles of individual students, student groups and the whole class.

To ensure this principle, before organizing teaching activities, teachers should organize students to answer the questions of Honey and Mumford test to categorize the students in the group have the same learning style . Based on the characteristics of the individual learning style of learning, teachers design activities to suit each group. The design and organization of learning activities appropriate for each learning style and to ensure students develop the basis of their academic fields, has created comfortable atmosphere for students to actively, proactively, interested in the process of learning and self-knowledge to dominate.

2.2.5. Principles ensure flexible application of methods and techniques appropriate to each teaching method

The relationship between teaching methods and Administrtive manifested in: Contents of teaching methods argued whether full, deep and modern but also just the theoretical form of the method, not the teaching methods in practice. It decided the existence of reality and effectiveness of specific teaching methods depends on Administrtive. Therefore, the application of Administrtive teaching methods and teaching practices in general and in particular teaching Biology 9 must be oriented to suit the students style learning helps students achieve the highest efficiency.

2.3. Teaching interactive pedagogical perspective applied in accordance Secondary Biology 9 of students

2.3.1. Construction of students style fit under interactive pedagogical perspective

One of the measures to help people learn to use the most efficient "machine learning" in the learning process, which is designed to teach those who fit teaching methods of learners. Models of Honey and Mumford teaching methods emphasized the design of learning programs, learning environment, assessment, teaching methods should be diversified to help learners study skills courses meet the requirements. They are not only based on biological (genetic factors - environment) but also pay attention to cultural factors - social and experience of the learners.

With the above analysis and the relationship between the three elements of the teaching process, we determined: the construction of a teaching methods suit each student's teaching methods is necessary. In this teaching , teaching methods elements of learners as the center, the use of teaching method or teaching method and teachers along with factors teaching environment is tailored to suit each teaching methods. Teaching method which is expressed through the following diagram:

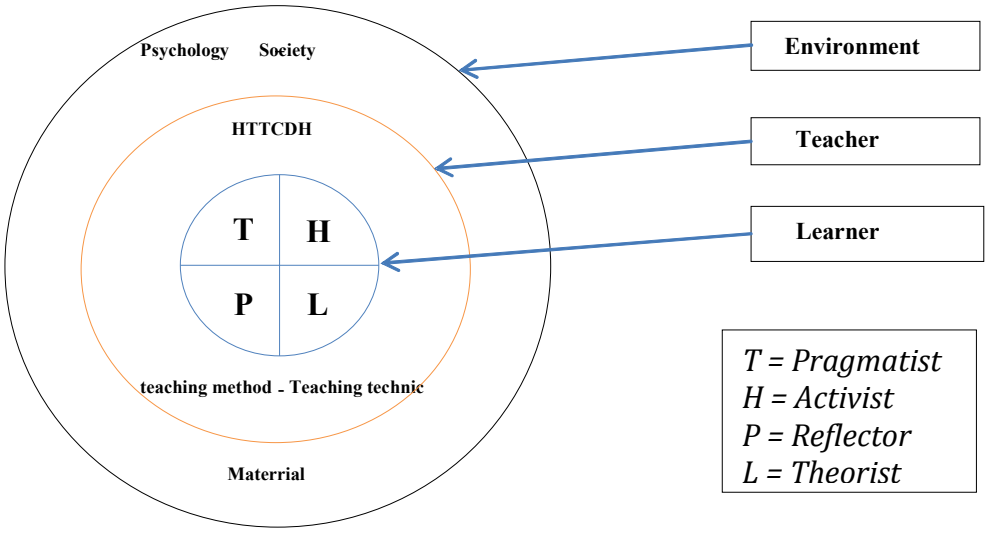

Figure 2.1. Learning style and taeching style appropriate under the interactive pedagogical perspective

In the process of teaching, organizational forms of teaching, teaching methods teachers use must be coordinated with each other, ensuring consistent with the learning styles of students, based on existing teaching facilities with and based on the environmental characteristics of teaching. As follows:

Learning style	***Activist***	***Reflector***	***Theorist***	***Pragmatist***
Suitable learning style	+ Students will learn best when they are working or practicing, they are exposed to new experiences or new problems; to work with others to solve a problem, a job. + Students will learn worst when they received lengthy explanations, to acquire more data, more information; must comply with the instructions or the learning process; have to read and write a lot.	+ Students will learn best when they are observed, consider and think about what just happened or problems. + Students will learn worst when they were urged, to make a leader.	Students will learn best when they are researching the theory, models, ideas, stories; Asked many, are involved in the analysis and synthesis. + Students will learn worst when they have activities are not clear guidelines, there are no clear guidelines in the study.	+ Students will learn best when they are applying new information or what they have learned to solve practical problems. + Students will learn worst when they have a lot of theory, do not see the immediate benefits of learning.
Appropriate teaching activities	+ Set those requests requiring the discovery and challenges. + To organize various activities in a variety	+ Research organization for student content knowledge in textbooks and draw	+ Statement of purpose, clear learning tasks, in particular. + Instructions are available in	+ Design, organized for student experience in a specific fact situation.

	of different small tasks. + Create the attention, the excitement of students through situations, news, current affairs.	relationships between the elements needed. + Organization for Students analytical knowledge through different aspects of the same problem. + Create conditions for student learning independently.	the form presented. + Organization for observation Students paintings, photos, models, diagrams ... knowledge from which to draw the lessons.	+ Organization for Students linking theory with practice. + Provide specific instructions, clear to the Students implemented.
Specific teaching methods	+ Teaching discovery + Hands – on	+ Stating and solving problems + Self Study	+ Presentation + Guiding students working with textbooks	+ Practice (laboratory practice) + Teaching project
Teaching environment	There is a bias towards the use of visual aids, multimedia.	Tend to favor use of visual, audio, reading.	There is a bias towards the use of means of reading or model.	There is a bias towards the use of media such as the internet, fieldwork, samples truth.

2.3.2. Process according interactive pedagogical perspective suit of learning style

Applying the principles and approach as analyzed, we build processes in teaching according interactive pedagogical perspective on teaching biology part Genetics - Biology grade 9 has 3 phases: (1) Classification of learning style; (2) Preparation according learning style class and (3) Organization learning style learning activities. The concrete steps are as follows:

2.3.2.1. Phase 1: Classification learning style

The objective of this phase is to understand each student in the class learning style. We organize quizzes for students under the Honey and Mumford's test. Phase 1 was conducted prior to the experiment. The following lessons need not perform this stage that always perform phase 2 of the process.

2.3.2.2. Phase 2: Preparation class according learning style

In this phase, teacher preparation, design content and design process of organizing training activities - school. The concrete steps are as follows:

Step 1: Analysis of course content and lesson objectives identified

This is a very important step, role-oriented and decisive for all further steps of the process teaching . In this step, teachers need to take smaller steps, such as target identification, preliminary analysis of course content and target identification details.

Step 2: Design teaching plans according to learning styles

- Analysis of the specific content teaching : From the analysis of course content, teachers identify the basic knowledge, focus and focus in the theme/ sub-theme.

- Identify and learning and teaching method: Based on the objectives, content and character lessons learning style respectively, Teachers and learning arangement choice to suit each student's learning style model and design the training activities - learning by each learning style.

- Prepare and teaching environment teaching method: After a full analysis of the above factors, the rest of the teachers are prepared and teaching environment teaching method matching the selected teaching method and suitable for different activities learning style of each type.

- Selection of forms of evaluation: teachers will complete the design of your teaching plans by specifying evaluation forms will be used to assess students' learning process.

2.3.2.3. Phase 3: Organization of teaching - learning activities learning style

This is the implementation phase of the preparation of teachers in theory in practice, to be implemented in the classroom in a 6 step process:

Step 1: To assign the task of learning

In this step teachers will clarify learning goals that students should achieve, tasked with studying the big question. Finding answers to the big questions is the process of student learning to achieve the goal of the lesson. To answer the big question, the student is responsible for personal research under his learning style. After finishing the process of individual self-study, teachers will divide the students into groups to discuss the complete answer to the big question, in full groups include all four types learning style. Then the whole class discussion to unify opinion research cognitive problems.

Step 2: Learning in each learning style

Teacher tasked to conduct individualized learning for students with learning votes. Each category will have a vote learning style own, clearly stating the tasks appropriate for each learning style. In this step, according to the requirements of each type learning style individuals conducting research students learning content and complete personal tasks before the group discussion.

Step 3: Group discussion multi-learning styles

After individual research student under private learning style, teachers conducted grouping (5-7students/group) so that in a group full of learning style. The mission of the group is to answer the big question that launched the original teacher .

Step 4: Discuss the whole class

After the completion of the task group, the class teachers held discussions in the form: assign each group sent representatives present, other groups have additional comments. Teachers controls the discussion, answering questions and knowledge orientation for student comprehension.

Step 5: Conclusion - Apply

From the results obtained in the steps discussed above, teachers point out the need to acquire knowledge and students conclusion, complete knowledge.

Teachers launched identifiable duties apply knowledge is formed from the above steps and individual requirements students undertaken to strengthen contact and theoretical knowledge in practice. At the same time this step, teachers will conduct testing - assessing the students to achieve the objectives of the adjustment process of teaching accordingly.

Step 6: Assigning the task of learning a new

After the end of the lesson, based on the content of new lessons, teachers will be assigned to new learning for students. This task is usually prepared for sub-themes or topics next.

2.3.3. Illustration:

2.3.3.1. Activity: Learn Chromosomes (Lesson 8 - Biology 9)

2.3.3.2. Activity: Understand the basic movements of chromosomes in the integral process (Section II - Exercise 9 - Biology 9)

2.3.3.3. Activity: Moocgan's Experiment (Section I - Lesson 13 - Biology 9)

2.3.3.4. Activity: What are the principles of self-replicating DNA? (Section I - Lesson 16 - Biology 9)

Chapter 3

PEDAGOGIC PRACTICE

3.1. Experimental purposes

Pedagogical experimental development (experiment) to examine the feasibility and effectiveness of the application in the interactive pedagogical perspective on teaching biology grade 9.

3.2. Experimental content

We conducted experiments for pedagogical content of Section Genetics and Variation of programs Biology 9 junior high school oriented topic.

3.3. Experimental Methods

3.3.1 . Choose Experimental object

**** Choose experimental schools and classes***

We have conducted experiments at 11 secondary schools of the districts in the province's capital Hanoi. The conditional experimental school facilities, equipment relatively uniform teaching compared to other schools in the same locality.

**** Choose empirical teacher***

We choose the teacher who teach experiments are highly experienced in teaching with classroom seniority of 5 years or more and have an interest in the proposed thesis direction.

3.3.2. Experimental layout

Experimet be conducted in the first semester of the academic year 2015 - 2016 and is arranged in a way "experiment with measure", which means layers and layers experiments differ only in an impact factor, which is the study of factors thesis, all the remaining elements are the same.

3.3.3. Evaluation methods

3.3.3.1. Content

Based on the purpose of research and scientific hypothesis of the research, we identified the need to assess content including perceived effectiveness of student knowledge and knowledge through endurance tests. Comparing the overall results in layers and layers experimets , and compare the results of the respective groups in the class measure and experiment . Conduct data processing in Excel.

3.3.3.2. Proceedings

** Evaluate quantitatively*

We evaluate the effectiveness of student knowledge is obtained through 11 tests including 8 quiz after each sub-topic and 3 test 1 secretion after each topic with the objective multiple choice questions and essay. To evaluate the results of student knowledge is obtained consistent with the scientific theory of the subject, all 11 tests are scored on a scale of 10, the results are aggregated and used to calculate GPA Excel software, standard deviation (S) of the test in both measure and experiment layer, from which to draw conclusions.

** Evaluation of Qualitative*

We conduct analysis checklist observations about students' attitudes toward learning and the quality of tests in grades measure and experimet to assess positive attitude, initiative of students in learning activities when applying interactive pedagogical perspective on teaching biology in the direction of the research study, from which to draw conclusio interactive pedagogical perspective on teaching biology.

3.4. Results and argues

3.4.1. Results analyzed quantitatively

3.4.1.1. Results of tests after school

With the purpose of assessing the ability to digest new knowledge of the students as soon lessons, we do a quick check (all 10 minutes time) in post in the grade 8 and grade experiment. The results of statistical tests in Table 3.1:

Table 3.1: Frequency of test points after the lesson

Project	***Model***	***Mark***									
	n	***1***	***2***	***3***	***4***	***5***	***6***	***7***	***8***	***9***	***10***
General	2944	0	37	91	259	557	1075	496	304	125	0
Experiment	2976	0	0	61	139	315	546	856	667	352	40

The frequency of the test points are listed in Table 3.2 :

Table 3.2 : Frequency of test points after the lesson

Project	***Model***	***% Mark of student X_i***										***Mode***
	n	***1***	***2***	***3***	***4***	***5***	***6***	***7***	***8***	***9***	***10***	
General	2944	0	1.26	3.09	8.79	18.92	36.51	16.85	10.33	4.25	0	6
Experiment	2976	0	0	2.05	4.67	10.59	18.35	28.76	22.41	11.83	1.34	7

Data from Table 3.2, we plotted the frequency of test points after the lesson (Figure 3.2):

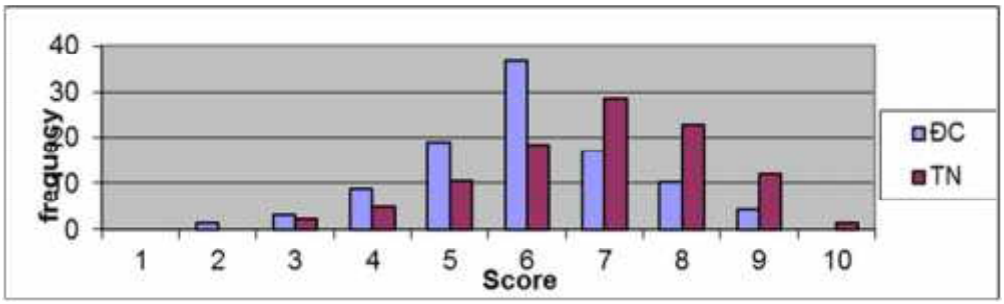

Figure 3.1: Histogram after-lesson test scores

Using data tables and charts 3.2 checkpoint frequency of classes after school and on experimental evidence, we see the value of the experimental classes Mode (Score 7) higher than the control layer (Score 6). Frequency Mode valuable Score under the control of the higher grades compared to the experimental class, the opposite point on the frequency of the class Mode values higher experimental control classes. This shows the results of tests after school in the experimental class is higher than the results of the control layer.

We continue to draw up a table (Table 3.3) and frequency graph to compare the convergence process (Figure 3.3):

Table 3.3 : Frequency of convergence tests carried points after the lesson

Solution	*% students obtain from Xi and higer*									
	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*
General	100	100	98.74	95.65	86.86	67.94	31.43	14.58	4.25	0
Experiment	100	100	100	97.95	93.28	82.69	64.34	35.58	13.17	1.34

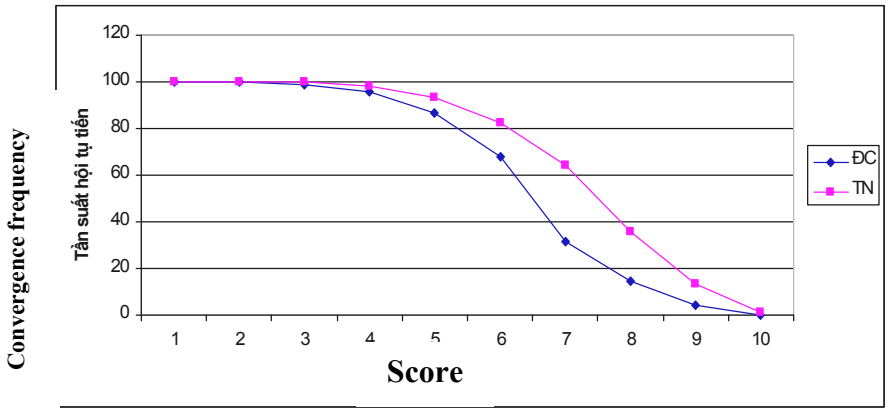

Figure 3.2: Histogram convergence tests carried points after the lesson

According to the statistics in Table 3.3 shows, the percentage of Score with good and excellent (from 7 Score or more) of the experimental class (64.34%) is higher than 2 times higher than the control class (31.43%). In Figure 3.2, the frequency advances converging lines of empirical overlying layer, right versus frequency convergence process of the control layer. From that showed results test scores afterschool empirical graders higher than the control class.

3.4.1.2. Results of tests after each chapter

To evaluate the stability of student knowledge, we shall examine in details the content first assess understanding, application and synthesis of knowledge after the end of each chapter to learn. 03 test results are more statistically 1 Table 3.4:

Table 3.4: Frequency of 45'minute- test

Chapter	*Solution*	*Model*	*Mark*									
		n	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*
Total	General	1104	0	9	14	47	252	329	322	108	20	3
	Experiment	1116	0	0	6	34	173	233	283	307	64	16

The frequency of the tests first Score is statistical information Table 3.5:

Table 3.5: Frequency of 45'minute- test

Chapter	*Solution*	*Model*	*% students get the Score X_i*										**Mode**
		n	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	
Total	Measure	1100	0	0.82	1.27	4.27	22.91	29.91	29.09	9.82	1.82	0.09	6
	Experiment	1109	0	0	0.54	2.8	15.6	21.01	25.52	27.5	5.77	1.26	8

Data from Table 3.5, we plotted the frequency of tests Score 1 secretion (Figure 3.3)

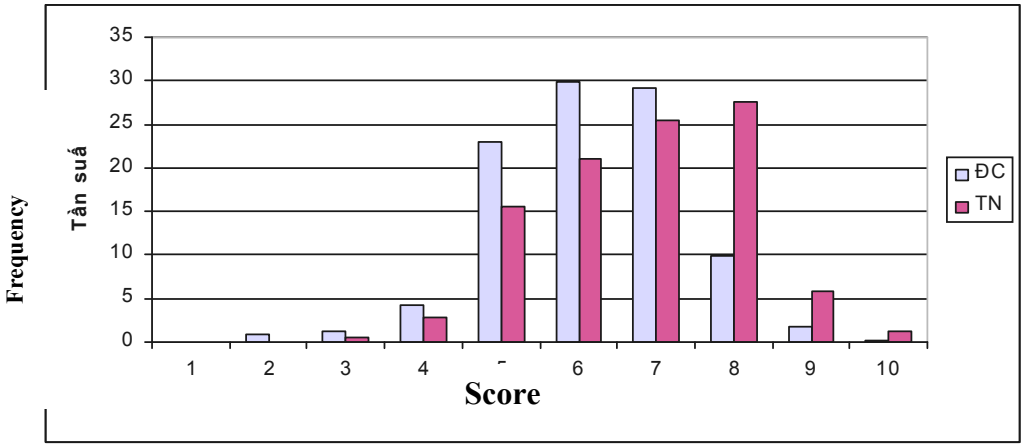

Figure 3.3: Histogram 1 score more tests

Using data tables and histogram 3.5 Score 1 secretion tests of experimental and control layer we see the value of the experimental classes Mode (Score 8) grades higher than đối chứng (Score 6). Frequency Mode valuable Score under the control of the higher grades compared to the experimental class, the opposite point on the frequency of the class Mode values higher experimental control classes. This shows the results of tests 1 secretion in experimental class is higher than the results of the control layer.

Thus the application of interactive pedagogical perspective based learning model in teaching based on learning styles have an impact on learning outcomes of students.

3.4.2 . Results of the qualitative analysis

Based on the test, we conducted the analysis: the ability to do the questions at different levels of awareness with special attention to the level of awareness to understand and apply knowledge. Qualitative analysis results showed that:

1/ The perceived quality of knowledge

Through the control and the experimental class can see the quality of biological knowledge comprehension of grade 9 class better experimental controls. Or experimental grade has been promoting a positive, self-discipline, initiative, their creativity in the classroom.

2/ The ability to apply knowledge

Students enrolled in the experimental class has creatively applied the results higher than the control class, the students in the experimental class has the passionate knowledge and especially the desire to apply what they learned in in practical life around.

3/ On the strength of knowledge

Experimental results demonstrated that the experimental class with higher reliability knowledge reference class even with the knowledge is difficult and requires highly abstract thinking as part Genetics in Biology 9.

4/ The attitude and proactive , positive student learning

Experimental grader mentally positive attitude in learning, the initiative of perceived knowledge increases with experimental time compared to the control layer.

After the doing the experiment , most students in the class had changed experimment psychological and spiritual disciplines learning attitude. Most experiments students are actively involved in group discussions, completed handout, offering examples of practical application. Particularly through interactive multiple students has the ability to analyze, evaluate logically difficult issues in textbooks as well as have the ability to generalize the knowledge content of the lessons.

5 / The maturity of learning styles

Through the organization of learning activities based on learning styles of the students, after the organization of learning activities for each learning style, we organize group activities and learning styles most discussed the whole class. Experimentally manipulate interactive pedagogical perspective consistent with the learning styles of the students we find students have optimized differentiation of learning style, students have the best promote the strengths about their learning styles in the learning process. At the same time, with a discussion between the student groups have different learning styles, students are learning this style have learned the strengths of students with different learning styles and gradually overcome the limited in their learning styles. In summary, the application of interactive pedagogical perspective in teaching fit the learning styles of the students have optimized differentiation according to the learning style of the student and the first step to create the multi-school style of learners.

CONCLUSIONS AND RECOMMENDATIONS

1. Conclusions

The research results of the thesis was to address the following specific issues:

1.1. The theme was codified and determine the basis of the application of theoretical perspectives on teaching Biology interactive pedagogical perspective on teaching Biology 9 secondary schools identified through interactive pedagogical perspective on teaching concept, structure models interactive pedagogical perspective on teaching standpoint, muscle philosophical basis, the basis of psychology, biological basis of interactive pedagogical perspective on teaching, the learning style model,...

1.2. The study has identified practical basis through surveys teaching method status of the application of secondary school teachers in teaching biology, by examining the status of construction and application perspectives in teaching Biology interactive pedagogical perspective on teaching school 9.

1.3. Content analysis, structural biology program Secondary, generalize the knowledge content suitable for different studneets objects.

1.4. Applying interactive pedagogical perspective on teaching perspective on construction lesson through a specific process including the stages: stage 1: Classification learning style, stage 2: Preparing learning plans and stage 3 learning styles Organize learning activities; at each stage there are different steps are arranged in the logic of the teaching process.

1.5. Experiment results confirmed the effectiveness of the application of perspective in teaching Biology interactive pedagogical perspective on teaching Secondary according learning style of students grade 9 is consistent with scientific theories previously proposed . Through experiments results have demonstrated the application of perspective in teaching Biology interactive pedagogical perspective Secondary is feasible and highly effective.

2. Recommendation

2.1. Due to the limited time and scope of the study, the implementation of the pedagogical approach is consistent with the student's learning style on a large scale with different levels of learning to be studied and additional.

2.2. Fostering students of teacher training schools and secondary school teachers in teaching theories from the perspective of pedagogical interaction and the use of teaching views in accordance with student learning styles. This is consistent with the case study skills that enhance the student's interpersonal capacity in learning and the differential teaching capacity of the teacher.

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