The American Journal of Social Science and Education Innovations
(ISSN – 2689-100x)
Published: May 31, 2021 | **Pages:** 503-507
Doi : https://doi.org/10.37547/tajssei/Volume03Issue05-88

IMPACT FACTOR
2021: 5. 857

OCLC - 1121105668

The Importance Of Developing Competence In Understanting And Interpreting Processes In Biological Objects Through Problem-Solving And Exercise

Jumaev S.Z.
Teacher, Department Of Biology Teaching Methods, Tashkent State Pedagogical University Named After Nizami, Uzbekistan

Journal Website: http://theamericanjournals.com/index.php/tajssei

ABSTRACT

A specific aspect af the methodology of teaching biology requires students to develop the competence to recognize biological objects to understand and interpret the proceses that take place them. A study of the effect of perception on memory on performance has been describul.

KEYWORDS

Cognition, object, biological object, subject, exercise, broblem solving, memory perception, lesson, information, reading, hearing, drawing, thinking, imagination, attention.

INTRODUCTION

The object of knowledge on the other hand, consist of specific objects, events and processes in the being that. The subject's cognition is focused on. Students learn about biological objects in general secondary school this begs the question: What is knowledge?

Cognition is a type of mental and spiritual activity aimed at gaining knowledge about nature, society and oneself. A person cannot succesfully engage in any tupe of activity without knowledge and imagination about the environment around him the product of

The American Journal of Social Science and Education Innovations
(ISSN – 2689-100x)
Published: May 31, 2021 | **Pages:** 503-507
Doi : https://doi.org/10.37547/tajssei/Volume03Issue05-88

IMPACT FACTOR
2021: 5. 857
OCLC - 1121105668

knowledge, the result of which is science and the acquision of profession takes place only through science. Also knowing is a spiritual need a vital nesessity that is unique to man. Every type of human activity is based on certain knowledge and new knowledge is generated in the protsess of activity. Students aqiure knowledge by compliting assigned tasks, creating new knowledge based on their knowledge. Since the acquisition of knowledge through experiments in the course of dialy activities is a method of cognition inhevent in all minkind the process of cognition is carried out through long-term continuous learning processes from autumn to summer in the formation of knowledge about biological objects through continous education knowledge arose and developed directy from the vital need of man from the need to live a prosperous life.

As a result of the relevance of the knowledge acquired in the course of long-term continuos lessons to the reality, she acquired knowledge is string thened is that this knowledge is becoming a reality. The truth is that human knowledge corresponds to reality. Discovering the truth or achieving scientific truth is the main task any scientific knowledge the knowledge that students acquire as aresult of studying biological objects is rainforced in memory. K.K.Platana gives the following psychological definition of memory "Memory is a mental reflection of impressions it is a mental processconsisting of remembering, remembering and then recalling or re-recognizing previously perceived, expenced things. Thanks to memory a person is able to acquire the accumulated experience of the people of the previous generation to apply his personal experience in practical activities to constantly expand his knowledge, skills and abilities. Any form of memory requires first memorization that is recording the perceived material in the mind for a certain period of time often for a long time. Hence remembering and storing are the basic process that take place in recollection and familiar memory. In order to remember something it is necessary to memorize. Recall any familiarity are result of an object being remembered or its retrieval in memory. It is also important to remember that the material is absorbet into the brain in the some way as it is perceived. For this reason it is important. That is material to be mastered systematic, accurate clear and that the words that need to be mastered are pronounced correctly and written correctly. Aquiring knowledge, especially reading books, any activity participation in the process especially the development of a new word-view develops children the ability to observe, to try to perceive the surrounding objects and events more accurately and one of the tasks of education is to pay attention for everything in children is the formation of ability to know. If a person knows that he has to repart often his observations and tell what he has seen and heard then the completeness and meaning of the observation will increase. The reason for this is that once a person begins to observe, he or she makes some practical preparations during the observation of the report and tries to give a definite name to what he sees and hears to describe their properties and characteristics. This forces us to fully understand the meaning of what we perceive to pay close attention for what what is important, to observe clearly and correctly.

In the process of learning under the direet guidance of the teaching the student learns the laws of the universe the nature of events and phenomena their specific features and acquires knowledge, skills and abilities through the content methods tools and forms of education. It is clear that the learning

The American Journal of Social Science and Education Innovations
(ISSN – 2689-100x)
Published: May 31, 2021 | **Pages:** 503-507
Doi : https://doi.org/10.37547/tajssei/Volume03Issue05-88

IMPACT FACTOR
2021: 5. 857
OCLC - 1121105668

process for students is process of learning and it's activities are cognitive. A biology teacher organizes directs monitors evaluates and teacher student's learning activities in the learning process creates the basic for the acquisition of knowledge by the individual through the implementation of education and developmental goals. For the teacher, the educational process is a professional pedagogical activity which is inextricably linked with the activities of students and analyzes this process generalizes it and makes changes in appropriate cases.

Learning objectives can be achieved when students's learning activities working on issues related to biology encourages the students to assimilate information relevant to the topic. If the student can find a solution while working on the problem, his interest in the problem will increase. In explaining the biological process to students it makes sense to place the tables from simple to complex. Skills are formed as a result of the student repealing the theoretical knowledge and applying it in familiar situations. As the problem becomes more complicated unfamiliar situations begin to arise in the student. Skills are formed from the acquired skills. Once a student has learned to work on a problem related to unfamiliar situations he or she developed competencies that he or she can apply in daily activities.

1. The length of a particular fragment of a DNA molecule is 73,1 nm 1. The length of a particular fragment of a DNA molecule is 73,1 nm if the distance between the nucleotides in the DNA molecule is 0,34 nm how many nucleotides are in this fragment? A)215 B)430 C)305 D)315

Processing:

1) L=N • 0,34

N=L/0,34= 73,1nm /0,34 nm=215 pieces

2) In first chain-215

In second chain-430

Problems the length of the DNA fragment is also given. From this type of problem it will be possible to the strengthen the concepts related to the topic and to teach new knowledge acquired through problem solving

2. The DNA molecula contains 1230 adenine. How many Thymines are in this molekula

Processing:

A) 2460 B) 615 C) 1230 D) 850

Processing:

1. Always the quantity A is equal to T and the quantity G is equal to S

A-1230=1230-T

So, T is also 1230.

3. If the length of DNA is 816 A, how many nucleotides are there in i- RNA formed during transcription (with a distance between nucleotides of 3,4 A)?

A) 480 B) 160 C) 80 D) 240

Processing:

The distance between nucleotides is 0,34 nm or 3,4 A

L=N • 0.34 A

N=L/3,4 A

The American Journal of Social Science and Education Innovations
(ISSN – 2689-100x)
Published: May 31, 2021 | **Pages:** 503-507
Doi : https://doi.org/10.37547/tajssei/Volume03Issue05-88

IMPACT FACTOR
2021: 5. 857
OCLC - 1121105668

This is the nucleotide in RNA that receives information from a single strand of DNA.

4. If a DNA molecule contains A=600 and G=2400 how many nucleotides are involved in the replication of that molecule?

A) 600–T, 2400–S

B) 600–A, 600–G

C) 600–A, 2400–G

D) 1200–S, 4800–T

Processing:

Always quantity G is equal to T the quantity G is equal to S, A-600=600-T G-2400=2400-S

5. A fragment of a DNA molecule consists of 12 pairs of nucleotides. If the distance between the nucleotides is 3,4 angstrem find the length of that piece of DNA

A)40,8 B)3,8 C)4,08 D)34

Processing:

1) 12 pairs of N=24 to N

1 strand -12 N

2 strand-24 N

2) The distance between the nucleotides is 0,34 nm or 3,4 A

L = N×0,34

L=12 • 3,4 =40,8 A

6. In the first strand of the DNA molecule 4,5 % of the total nucleotides are located, the remaining G is located on the second thread. The second strand contains another 162 cytosines. How many nm is the length of a single strand of RNA of the same DNA molecule?

A)110 B)612 C)1213 D)900

Processing:

1) Always the amount A to T. The amount of G is equal to S,

A is 4,5%- 162=162- 4,5 %. T=4,5+4,5= 9 %

100%- 9%=91% This percentage belongs to G and S so

G-45,5%=45,5%-S

162 (A-T) ---- 4,5%

x (G-S) ---- 45,5% x=(162 • 45,5)/4,5 x=7371/4,5 x=1638

2)Total in the 1 chain To find the nucleotides, we add G to A:

162+1638=1800

3)The distance between the nucleotides is 0,34 nm or 3,4 A

L=1800 • 0,34=612 nm

The formation of I-RNA from the 1 stand of DNA. In conclusion in order to master the material it is necessary to be able to imagine the process to work on the topic to compare it with the information in the book. Thinking plays a particularly important role in this. In the study of process related to the biological object, the solution of biological problems plays an important role in the formation of thematic skills. Therefore any computational

Published: May 31, 2021 | **Pages:** 503-507
Doi : https://doi.org/10.37547/tajssei/Volume03Issue05-88
IMPACT FACTOR
2021: 5. 857
OCLC - 1121105668

exercises about the biological object being situated are of great importance, and the material mastered in this way will not be forgotten for a long time.

REFERENCES

1. Narzulla Boymurodov "Applied psychology" Tashkent 2008
2. Fundamentals of psychology (text) Textbook/K.Nazarov [et al] Tashkent. National Society of philosophers of Uzbekistan 2018-380 p.
3. Philosophy; Textbook for higher education. Institution E.Y.Yusupov, Sh.Shermuhammedov, A.T.Ayupov et al. 2nd edition T.:Teacher "NM":2005-304 p.
4. Biology Pedagogical technologies in teaching. A textbook for students of higher educational institutions/ J.O.Tolipova: editor in chief A.T.G'ofurov Ministry of higher and secondary Special Education of the Republic of Uzbekistan T.:Cholpon Publishing House- Creative house of printing house. 2011-160 p
5. Republican Educational Center of the Ministry of Public Education of the Republic of Uzbekistan "State educational standards and curriculum in biology of general secondary education Tashkent-2017