FORMING KNOWLEDGE IN STUDENTS WITH INTELLECTUAL DISABILITIES

Part 1

Kabelka Ivan Vladimirovich,
associate professor, Therapeutic Pedadogics Department

OUTLINE

1. Knowledge structure
2. Facts study
3. Forming ideas

Knowledge structure

- Knowledge subdivision into **empirical** and **theoretical.** The first category reflects physical characteristics of nature objects and phenomena
- **Empirical knowledge:** facts, ideas. Forming theoretical knowledge on their basis. They reflect the essence of nature's objects and phenomena, internal connections and relations.
- **Theoretical knowledge:** notions, cause-and-effect relations. Notions are the most important part of the theoretical knowledge. Limiting their forming in students with intellectual disabilities by the contents of Biology curriculum.

Facts study

- **Facts** are the obvious characteristics of living organisms and phenomena checked by observations and measurements.
- Placing them into *special nomenclature*, *biological information* necessary to understand an idea or a notion (form, color, body parts, habit of life), *digital data*, etc.
- Mastering facts by students during observations, self-observations, demonstrations, experiments, listening to professors, reading articles and textbooks, etc.

Mastering facts

Levels of students' mastering facts:

- *one* – non-systematic defining of facts,
- *two* – successive facts enumeration
- *three* – establishing connections between them
- *Facts serve* the expansion of data about the objects; as the foundation for conclusions and for specifying theoretical points.
- Limits of learning abilities of students in remembering and retrieval of facts.

Forming ideas

- Types of ideas by way of formation: ideas of **memory** and ideas of **imagination**.
- Forming ideas of **memory** on the basis of the direct sensing of the object or visual aids: pictures, illustrations, film strips, slides or film transparencies.
- Creating an image of ***perception*** without the direct sensing of the object (reading or listening to its description), based on reality.
- ***Sources*** of forming ideas: natural and illustrated visual aids, spoken or printed materials.

Forming ideas

Stages of ideas forming:

- ***Stage one*** – perceiving objects, singling out characteristics, choosing the most important ones. Providing for the lasting and conscious learning of the significant characteristics by students.
- ***Stage two*** — renewing the object images by students from memory or with the help of imagination
- ***Criteria*** for ideas forming is the number of characteristics (specifications) of objects of phenomena renewed by students from memory
- Accurate and full ideas create basis for forming notions in students.

Notions typology

- Notions types according to their **contents**: basics of sciences included in school Biology curriculum.
- ***Morphological*** – notions about the external structure of organs or their systems: a leaf contains leaf blade with veins and petiole. ***Anatomical*** – notions about the internal structure of organs or their systems: mammals' heart has two halves (left and right), with a wall dividing them.

Types of notions

- ***Physiological*** – notions about the functions of organs or their systems: starch produced in plant leaves in the light, plant breathing and alimentation
- ***Systematic*** – notions about the subdivision of living organisms into certain groups: invertebrates, (worms, arachnoids, insects), vertebrates (fish, birds, mammals, etc.).
- Excluding from school Biology curriculum a big part of systematic categories.

Notions typology

- ***Ecological*** – notions about the changes in the structure of the living organisms' organs depending on the place of growing/ living, modifications of plant leaves, spreading of fruit and seeds.
- ***Applied*** notions. *Agrotechnical* – methods of fertilizer application, growing cultivated plants. *Zootechnical* – keeping and maintaining pigs. *Medical* – first aid to those with broken bones, hurt joints and muscles. *Hygienic* – maintaining rules of hygiene.

Notions typology

Notions subdivided by **composition**: according to the contained components

- **Simple** – notions containing one element of knowledge: leaf morphology, petiole anatomy.
- **Compound** – notions containing several elements: morphology, physiology and ecology of leaf.
- **Local** – notions developed in one topic, on separate lessons: evaporation of water by leaves.
- **Special** – notions formed in one of Biology courses: plant morphology, animals anatomy, human physiology.

Notions typology

- ***Common biological*** – notions about biological regularities pertaining to all living objects: organism is a whole, interconnection of organisms and their environment, interconnection of the organ structure and its function.
- Forming *common biological* notions on the basis of *simple special* notions and their development in all Biology curriculums. Close connection between common biological, special and applied notions.

Литература

- Кабелка, И.В. Обучение биологии учащихся вспомогательной школы: учеб-метод. пособие / И.В. Кабелка. – Минск: БГПУ, 2013. – 180 с.
- Кабелка, И.В. Формирование знаний у учащихся с интеллектуальной недостаточностью на уроках биологии / И. В. Кабелка // Спецыяльная адукацыя. – 2017. – № 3. – С. 29 – 34.
- Кручинина, С.С. Методика преподавания естествознания во вспомогательной школе: учеб.-метод. пособие. / С.С. Кручинина, И.В. Кабелка. – Мн.: БГПУ, 2002. – 102 с.
- Соломина, Е.Н. Формирование естественнонаучных знаний в специальной школе / Е.Н. Соломина // Обучение детей с нарушениями интеллектуального развития: (Олигофренопедагогика): учеб. пособие для студ. высш. учеб. заведений / Б.П. Пузанов, Н.П. Коняева, Б.Б. Горскин [и др.]; под ред. Б.П. Пузанова. – 2-е изд., стер. – М.: Издательский центр «Академия», 2006. – С. 152 – 171.