SUMMARY OF NEW CONCLUSIONS OF PHD THESIS

Title: **Formation and development of the concept of material and energy transformation in high schools' biology program.**
Specialty: Theory and methods of teaching Biology
Classification: 62.14.01.11
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New conclusions

1. The content and target to improve teaching biology is identified logics of movements and developments of material and energy transformation concept through stages of studying, classes and living organization levels.

2. Identified the direction of expanding the content, nature and movement of material and energy transformation concept by analyze movement logics and development through living organization levels.

3. The evidence of concept, biology concept, material and energy transformation concept is the root of awareness to identify the development of material and energy transformation, and identified system of material and energy transformation concepts from Biology 6 to Biology 12.

4. In teaching biology, to help students holding solidly system of concept, teachers should base on principle, process and methods to organize learning activities material and energy transformation concept trending from general to particular in each level of cell level, Prokaryotic level, Eukaryote level, population and ecosystem –biosphere level.

5. Correctly way for experiment performance, measurement criteria in the experiment, tools in experiment and data system as the base proofs that the supposition is correct, means that students in experiment classes can hold solidly concept system, understand thoroughly development process of concept system, with knowledge then studying capacity of students is formed and developed.

6. Should have documents to improve or training for capable teachers that helps for improving teaching method in general and biological concept teaching in particular.

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