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# Biology Teaching Methodology and its Modern Methods

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***Abstract:*** *In this Article we discuss the different effective methods of teaching biology. Biology is one of the central branches of scientific knowledge and is relevant to topics including medicine, genetics, zoology, ecology, and public policy. As such, it has the potential to interest almost any student. To be successful at teaching biology, however, you will have to think carefully about how to share this exciting field in ways that are relatable and enjoyable. Along the way, you should make it your goal for students to achieve at least a fundamental knowledge of biological concepts.*

***Keywords:*** *biology education; sustainability education; environmental education; education for sustainable development; outdoor education; primary schools; secondary schools; pre-service teacher education; literature review.*

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One of the international goals for the future is the construction of a sustainable society. A sustainable society is considered to be a society that has reached sustainability through a process called sustainable development. Sustainable development as a concept is heavily context-dependent in social, cultural, and environmental situations. Brundtland's report defines sustainability as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs". According to Diesendorf, this definition emphasizes the long-term aspect of the concept of sustainability and introduces the ethical principle of achieving equity between the present and future generations. It does not mention the natural environment explicitly, focusing only upon human needs or wants.

**1-Relate biology to everyday life.**

Some students will be naturally drawn to biology, while others will ask why they should care about it. All students will benefit if you can show how biological concepts and questions are relevant to daily life. This will deepen their appreciation of of4t2ter science and make it more relatable. Do things like:

- Share with your class news items on medicine, DNA, the environment, population growth, and other topics that biology touches upon.
- Offer extra credit to students who will give a brief in-class report on a reference to a biological concept they came across in a television show, movie, etc. Ask them to explain the reference, what biological concept it dealt with, and why it is important.
- Talk about careers that draw on biology, such as medicine, pharmaceuticals, conservation, public health, etc. You can even invite individuals practicing in these fields to visit your class, talk about their work, and answer student questions.

**2-Incorporate hands-on activities.**

If you can make the study of biology tangible for students, they are likely to be more invested in their education. There are lots of ways of bringing biology to life, so to speak. Students can do things like:

- Plant a garden to learn about photosynthesis.
- Raise butterflies or other animals to learn about the life cycle.
- Dissect specimens to learn about anatomy.
- Test samples of store-bought yeast to see whether or not they are alive.
- Look at slides of various kinds of cells.

**3-Incorporate multimedia materials.**

Creating a little variety in the format of your instructional materials can make your biology course more lively. In addition to textbooks, try to incorporate videos, podcasts, and other forms of media when introducing topics in biology.

**4-Look for ways to bridge technology and biology.**

There are lots of opportunities for those interested in technology to deepen their involvement with biology and vice versa. Be open to new and exciting modes of instruction, and invite your students to share the technological concepts and tools that interest them. For instance:

- There are valuable resources devoted to using the popular game Minecraft in educational contexts, including biology courses.
- Allow students to utilize technology for assignments in your course. For instance, students with an interest in web design might develop a website to illustrate a biological concept.

**5-Utilize science games to teach biology.**

A little friendly competition in the form of educational games can be a nice way to spice up your biology course. There are resources available for developing biology-centered versions of games like: that is helpful in Effective methods of teaching biology.

- Jeopardy
- Quiz bowl
- Taboo
- Pictionary
- Twenty questions

**6-Host biology-centered field trips.**

An occasional trip outside of your classroom can be a welcome change of pace and a real opportunity to enrich student's understanding of biology. Depending on what is available in your area, and what your school will allow, you might be able to arrange a visit to places like:

- A local science museum[5]
- A botanical garden
- A zoo
- A farm

- A research lab

The study aimed to identify and describe useful teaching methods in biology education and sustainability education (SE) including outdoor education (OE) for promoting sustainability. Although our analyses of recent research on teaching methods and their evaluation included several details, a holistic view of the educational processes is needed for the understanding of all effects. All teaching methods are, of course, context- and subject-dependent, and cannot therefore be arranged as a list of the most or least effective methods. The analyses, however, provide ideas of how to use these methods together for promoting sustainability aspects in teaching, and also of how to evaluate the whole process for the purpose of curricula development. The study emphasizes especially the value of inductive teaching methods with student-centered approaches in authentic environments with first-hand experiences.

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