One of the possible directions of introducing new knowledge into the educational process of students of architectural specialties is work in student scientific societies. And the experience of such activities demonstrates a positive result. Students, having first become acquainted with the principles of fractal geometry, say that this new knowledge changes their whole understanding of the world. Also, according to the authors, it is advisable to carry out such work in advanced courses.

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**INTEGRATING VISUAL ARTS INTO ESP FOR CHEMISTS**

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Arts integration should be an essential part of teaching English for Specific Purposes (ESP) for chemists. In this task art is used, first of all, to extend content knowledge and develop creative thinking and communication skills. Visuals become stimuli to encourage verbal responses and focus student’s attention. To choose appropriate arts, teachers are supposed to take into account specific curriculum goals and needs of their students.

This short abstract gives an idea of arts usage for the lesson on topic *Chemical laboratories*. Ideally a projector and computer is needed for the task but it is possible to complete it using only mobile phones too. Here are the instructions for the teachers.

Split your group into small groups. Give students time to search for the picture of a perfect laboratory, taking notes of some interesting details, reading the description if available. Give them time to discuss the pictures found in pairs, then let students vote in their teams and choose the picture they will show as a perfect lab from their team.
Locate each team leader in different places of the room so that all other students can walk around the room, approach each team’s picture and leave a paper with a heart near the picture which they consider to be a perfect lab. Ask several students to justify their choice. The picture which gets the biggest number of hearts is nominated a perfect lab of the group.

Elaborate on equipment students can see, types of laboratories, institutions which run them, when who and why needs laboratory services. Introduce new vocabulary related to the topic such as a *wet lab*, a *living lab*, *glassware*, *R&D lab*, *cleanroom* etc.

The teacher then starts the discussion asking and revealing not mentioned by the students characteristics of a perfect lab, its accessibility, location, materials, safety. It is a good idea to use PowerPoint presentations of the best research labs in the world, compare the early laboratories with the modern ones.

An inquiry technique called visual thinking strategies can be used by the teacher to engage students into discussion. In addition, the Modern Socratic method [1] with the emphasis on well-formed question and continuing the investigation, not on finding absolute answers can enhance critical thinking. Both students and teachers can use questions to develop deeper understanding. Thus, the six types of Socratic questions [2] can be beneficially used for ESP classes with chemists. They develop critical thinking. According to [3] students with critical thinking skills could learn English more effectively.

Interesting discussion can arise from showing students *Pasteur’s portrait* by Edelfelt. First, students try to guess the time of the picture, country, and person shown, why is this man thoughtful, what is he investigating in their opinion, should he be wearing some protective equipment? Second, students look at the pictures of some early laboratories. For example, a lab used by Lavoisier in the 18th century, Thomas Edison in his lab in 1901, or a lab in the 1970s. Students compare these pictures with the ones previously found at the beginning of a lesson.

Another good option available is using a virtual lab experiment. American Chemical Society found on the Internet has a vast selection of simulations. Trying one of these with your students and comparing the contrasting work in a traditional lab versus a virtual lab, highlighting each lab’s pros and cons using mind maps is one more way to make your ESP lessons memorable and meaningful.

To sum up, we agree with Oliver, Maureen and others [4] that arts integration provides a catalyst for drawing out the soul and resisting technical, mechanical high-stress, high-stakes fast-paced education models.

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