

Teaching for technology

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Анотація

В даній роботі розглянуто проблему майбутньої робочої сили для нових технологій в технічному світі. Все менша кількість студентів вибирають технічну кар'єру, загрожуючи тим самим зростанню високотехнологічної ініціативи. Також в статті запропоновано спосіб вирішення проблеми, шляхом підвищення інтересу студентів до вибору технічної кар'єри.

Ключові слова: нові технології, навчання, наука, студенти, професії, прикладні вчені.

Abstract

In this work the problem of the future work force for new technologies in the technical world is considered. Less and less students are choosing a technical career threatening the growth of high-tech initiatives. In this paper the way to solve the problem, by increasing an interest of students in choosing a technical career, is suggested as well.

Keywords: new technologies, teaching, science, students, profession, applied academics.

We live in an increasingly technical world with daily advances that drive our economy. The big question for these new technologies is, “Where will the future work force come from?” Even today there are so many jobs and so few qualified people to fill them. Insufficient numbers of students are opting for a technical career, thereby threatening the growth of high-tech initiatives. Sobering demographic predictions indicate that there will be fewer people entering the work force when baby boomers start to retire. The challenge that remains is how to replenish our work force and reestablish an interest in the industry.

Convincing concrete learners

Perhaps we need to teach differently to make learning an exciting challenge that engages more of our students. Experienced teachers know that how one learns and why one learns varies considerably from student to student. A typical high-school math/science class can be divided into three groups: those who are motivated and learn abstract concepts easily, those who are concrete learners and who master principles and concepts best when theory is connected to their world, and those whose talents lie in areas outside of math and science [1].

The first group is likely to focus on the sciences as a profession, while the third group is likely to turn elsewhere for career inspiration. In the context of the workforce shortage, we need to focus on the middle group – the concrete learners – who have the skills and potentially the interest to focus on a technology career, if properly engaged by the material.

The self-motivated, abstract learners are able to generalize without difficulty and extrapolate from principle to application [2].

They are usually intrigued by the subject matter and learn well, often because they are attracted by the beauty and rigor inherent in a particular mathematics or science course. While relevance of subject matter and connections with the real world undoubtedly would enhance their learning process, they aren't too dependent on applications for subject matter mastery. This group of abstract learners forms the principal source from which we will acquire our future scientists and engineers.

The concrete learners need to see the connection between theory and practice to learn well. They are talented, generally like to work in laboratory situations, enjoy using equipment to make measurements, and always learn best when they see a connection between the subject matter and a real-world application [3].

In too many classrooms, however, concrete learners are not given the opportunity to see and appreciate relevance and connection; nor are they required or given the opportunity to demonstrate principles in hands-on situations. Most importantly, they are not introduced to modern equipment in exciting, realistic laboratories where measurement, data, and theory come together. As a result, most of this group loses interest in science. And we, in turn, lose contact with a sizable pool of students who have the potential to become future scientists, engineers, and technicians.

Applied academics

To capture the interest of this group – and to enrich the learning experience of the abstract learners – we propose a concerted move from simply teaching academics to teaching applied academics. Applied academics provides real-world relevance for abstract subject matter and answers two key questions generally raised in students' minds: “Why do I have to learn this?” and “What is this good for?”

Applied academics remains true to the rigor and integrity of basic science and concepts while connecting the principles used. The approach is always contextual; for example, one learns in the practical context in which the basic concepts are used and valued. Contextual, applied academics is important because it does not turn off the concrete learners from science or engineering; rather it engages them [4].

With applied academics, we can take the opportunity to create an awareness of career options in technical fields as students move through the educational system. As a result, more students may consider going on to post-secondary institutions such as technical/vocational institutes and four-year baccalaureate programs. Teaching students in a way that is meaningful to them will benefit everyone.

СПИСОК ВИКОРИСТАНОЇ ЛІТЕРАТУРИ / REFERENCES

1. Столяренко Л.Д. Психология и педагогика высшей школы. Учебник. – Ростов-на-Дону: Феникс, 2014. – 620 с.
2. Басова Н.В. Педагогика и практическая психология. – Ростов-на-Дону: Феникс, 1999. – 416 с.
3. Столяренко Л.Д., Столяренко В.Е. Психология и педагогика для технических вузов. – Ростов-на-Дону: Феникс, 2001. – 512 с.
4. Шарипов Ф.В. Педагогика и психология высшей школы: учебное пособие. – М.: Логос, 2012. – 444 с.

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