A Physiologist Returns With Letters by Children

To the Editor:

Since 1993, I have performed an activity that has given about 1,250 children a chance to participate in the process of scientific inquiry and to discover the wonder of real hearts and lungs. I have written that these young learners delight in this opportunity for science exploration (1). Nevertheless, my words, even deliberately evocative words, fail to convey what the children truly think and feel about this opportunity. In this letter, I share the most memorable remarks that children have written in their thank-you letters to me.

I liked when I touched the lungs. They felt cool and smooth.— Laura, kindergarten

I liked it when [my teacher’s] thumb was the hot dog and the diaphragm ripped. Sometimes experiments fail!— Emma, kindergarten

I liked when you lit the candle and put it under the glass jar. Pretty soon the candle went out because there was no oxygen in there. I liked learning the new words.— Vivian, kindergarten

I liked what you showed. What I touched was icky, but I liked touching it anyways.— Zena, grade 1

Thank you, Dr. Doug, for letting us see the lungs and for letting us play with the lungs. I thought it was fantastic.— Love, Sean, grade 1

I think you have a very good job.— Your friend, Conor, grade 1

Muchas gracias, Dr. Doug, por enseñarnos de los corazones y los pulmones de los animales. Gracias por venir a vernos a todos nosotros.— Sincerely, Pamela, grade 2

When I touched the lungs that were full [of air], they felt like a piece of rubber. When I touched them when they were empty, they felt like a rubber bag.— Thanks again, Tommy, grade 2

I learned a lot. I told my big brother, and now he knows as much as me.— Thanks again, Kayla, grade 2

I like what you did for my class. You had to cancel some of your appointments just to come to our class. You don’t know what this means to my class. Oh well. I just wanted to say thank you.— Sincerely, Calan, grade 3

When we touched [the lungs], they felt like a soggy potato dipped in Kool-Aid with a stinky smell. When we dissected the lungs, they looked like an ant hole with red clay spilled on it.— Your friend, Nicole, grade 3

The lungs felt like they were as soft as a beautiful rose bush.— From, Michael, grade 3

I was wondering, if you ever have an extra lung, could you send it to me?— Sincerely, Tony, grade 5

How do I make a model of lungs, and how could I make it so it looks like one lung has cancer?— Sincerely, Ryan, grade 5

I really like learning about lungs. As soon as I got home that night, I started doing really fun experiments. You got me motivated.— Sincerely, Lauren, grade 5

I think that I might want to be a physiologist when I grow up. I was thinking, do fish have lungs? If they
do, then how do they get air in them, because the gills are on both sides of the body.—Your friend, Wendy, grade 6

I learned that if you squeeze a piece of lung, you will hear a popping sound.—Sincerely, Steven, grade 6

That was awesome when you showed us those rabbit lungs! I have a rabbit myself, so it was even more interesting.—Sincerely, Julia, grade 6

Are you married? I don’t want to marry you or anything. I’m just wondering.—Sincerely, Rachel, grade 6

As compelling as these remarks may be, they still fail to capture fully the ways in which children have reacted to this opportunity for science exploration. Once these children have considered the questions I ask—once they have felt the thrill of exploration and discovery—they realize that they too can ask questions. About anything. All on their own. Sometimes, these excited learners begin experimenting before I leave the classroom. At the end of one kindergarten visit, when I sat down to pack up my things, several animated children gathered in front of me and then started hugging me. Experiences like these are still powerful stuff.

By virtue of this activity, I have been granted the opportunity to participate in the lives of a great many children. As a result of witnessing their reactions, I am convinced that some of these children will be affected forever by the fun and wonder they experience when I bring real hearts and lungs to their classrooms. It is fitting that rarely, if ever, will I learn of any lasting contribution I may make to the lives of these children: few, if any, of them will ever realize the sheer joy they have added to mine.

DOUGLAS CURRAN-EVERETT
Department of Pediatrics
School of Medicine
University of Colorado
Health Sciences Center
Denver, CO 80262

REFERENCE

Editor’s note: The following report from the Czech Republic was scheduled to appear in the June 1998 issue of Advances in Physiology Education, but an unforeseen postal problem delayed its publication. It is part of a special section titled “Why do we teach and learn physiology? A new look at the national characteristics.”

Report From the Czech Republic
To the Editor:

The Czech tradition of teaching physiology is one of the oldest in the world. It was the famous Czech physiologist Jan Evangelista Purkyně who founded the first physiological institute in the world in 1837 in Breslau in the Prussian Kingdom (now Wroclaw, Poland). Purkyně also founded the second physiological institute in the world in the year 1851 in Prague in the Czech Kingdom, when he became a professor of physiology after his Prussian period. Physiology was taught at Charles University (1774–1918 Charles-Ferdinand University) and also at German University in Prague (1918–1945). There were many famous Czech physiologists after Purkyně: E. Babá (founder of comparative physiology), V. Lauerger (discoverer of ferritin), E. Gutmann (muscle physiology), and V. Kruta (heart physiology).

From this explanation of the traditions of Czech physiology, it is absolutely clear that this long-term tradition is very important to us. Physiology was and still is, in most cases, one of the basic subjects of medical teaching. The national characteristic is very similar, because mostly the same textbooks have been used for many years. Textbooks of Czech provenience were produced by different teachers of different departments of physiology in the Czech Republic. The other textbooks are done by different departments independently, especially the textbooks for practical exercises. We are also teaching from the translated textbooks (Ganong). We are preparing to translate the Berne and Levy Textbook of Physiology. For foreign students we are using mainly the textbooks of Guyton and of Schmidt and Thews.

The teaching of the basic knowledge of physiology is approximately very similar in all departments of physiology in the Czech Republic, but there are differences between the different medical curricula. I am the Head of the department of all physiological disciplines in the Third Faculty of Medicine, Charles University. The department is called The Department of Normal, Pathological and Clinical Physiology. We are teaching normal physiology in first two years but in two modules. Module A is called “Structure and Function of the Human Body,” which includes the
courses of anatomy, histology and embryology, biochemistry, and physiology. Another approach is used in module C, which is called “Methodological Basis of Medicine.” In this module we are teaching the basis of experimental medicine, which serves as a base for all experimentation in forthcoming years. The other physiological disciplines, pathological and clinical physiology, are taught in later years. In the third and fourth years, there is problem-based learning (PBL). In the fifth and sixth years, there is the individual clinical teaching of medicine. Again, we are going back to the physiological and pathophysiological principles, and we are also teaching clinical physiology.

In the Czech Republic there are seven medical faculties and seven departments of physiology. Six of them are very similar. Our physiological, pathophysiological, and clinical department is a little different concerning its approach to the teaching of physiology, but the goal is the same: to teach students the main principles of physiology (so-called the clinic of a healthy human = normal physiology). The pathological physiology of diseases and clinical physiology are especially used in the examination of patients.

Political pressure was very strong in our country, but during every period of suppression of intellectual life there was a great resistance of Czech people. It had started already in Purkyně’s time. During his return to Prague there was the so-called Bach’s absolutism. It was a totalitarian approach not only to political life but also to science. In that time Purkyně discovered new findings from his very rich scientific life. He also founded the Czech journal Živa. Before the first world war, there was František Mareš who is accepted as having been an excellent physiologist.

Unfortunately, there is now poor scientific policy in our republic. The problem of the renovation of old machines and equipment is not sufficiently solved. However, we have a lot of very enthusiastic people, who are prepared to sacrifice their lives for physiology, which is a most important characteristic of our physiological sciences.

RICHARD ROKYTA
Department of Normal, Pathological and Clinical Physiology
Third Faculty of Medicine
Charles University, Prague, Czech Republic