Education and PATH

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As PATH begins to consider its role in education, it views these activities from the perspective of its mission. As you know, PATH mission is to attempt to build a home for a community interest in hydrogen. For PATH, education is a means of making the hydrogen community and the general public more knowledgeable, and therefore, better able to contribute to the development of a hydrogen economy. What functions can PATH undertake to educate and share knowledge within the hydrogen community? By itself, PATH can play no role beyond disseminating information; however, with partners, it can begin to meet two needs of the larger hydrogen community. The first step is to increase the understanding of hydrogen and related technologies and help prepare the next generation of the hydrogen community. The second is to educate the members of the community to the current level of knowledge. The partners in this process must be both academic and research institutions. Since hydrogen has not yet matured as a technology, there is an opportunity to tailor knowledge-based activities to emerging hydrogen trends.

Education has changed dramatically over the past twenty years, mostly due to the personal computer. It is the most revolutionary device for knowledge based activities since the printing press more than 500 years ago. Computers have become an important tool that has reduced the necessity of memorization and other process based learning techniques, allowing the user to focus on analysis and results. Nowhere is this more important than in the fields of science and engineering. One other important impact computers have had on education has been to make learning more visual. With the use of computers, visualizing concepts, understanding interrelationships, and correctly formulating problems are now relatively more important than grinding through problems to a solution. The computer when used to its maximum potential, which is not often, facilitates the visual synthesis of ideas from equations that had previously been dimly understood.

By relying heavily on the computer for simulation of experiments, hydrogen technologies can be safely and easily brought into a classroom environment. It is the ability to unlock this potential with respect to hydrogen education that makes curriculum so attractive. By partnering with universities and high schools throughout the its member countries, PATH can help develop the next generation of the hydrogen community. As the process related issues associated with engineering and science becomes less relevant, focus can shift ot portraying concepts visually. Then learning and creating knowledge can be carefully integrated.

Aside from educating high school and college students, there is a great need for those in the industry now to share research and information in order to strengthen and grow hydrogen technologies. The goal of PATH's research activity is to develop a network of researchers from non-member countries to share results and information. The activity will establish centers of excellence in hydrogen where researchers can visit for short periods to perform hydrogen and fuel cell research. They will then return to their countries and continue that research independently, sharing the information with others while contributing in a meaningful way to the overall body of knowledge of hydrogen and fuel cells. A broader goal of this effort is to establish a hydrogen and fuel cell presence that is connected throughout the world.

Experience has taught us that researchers are the ones that form hydrogen societies within their countries. Combining PATH's research activities with the curriculum development will result in educating students and eventually governments about hydrogen and fuel cell technologies, while furthering the research efforts throughout the world. Overtime this results in more countries becoming interested in hydrogen, more citizens in each country becoming interested in hydrogen, and the development of a deeper pool of hydrogen knowledge. Ultimately domestic industry interest and market preparation for a global hydrogen economy will be established.

The net effect of these efforts are to modernize our teaching methods, educate people about hydrogen, increase the pool of researcher working on hydrogen, and provide hydrogen associations that will join PATH and strengthen and expand our activities.