

Doc Councilman: Educator, scholar, coach, and friend

by J. Stager

Perhaps the most applicable phrase to describe Doc Councilman's accomplishments and scholarly contributions is a simple one:

“By learning you will teach, by teaching you will learn.”

In 1957, Dr. James Councilman accepted the position as Indiana's tenth swim coach. In so doing, however, not only did IU obtain the services of perhaps the best coach in any sport in the world, but as an added benefit, Indiana obtained the talents and skills of an outstanding educator, an insightful learner.

In the best of all possible worlds, at the best of all, possible universities, a perfect harmony exists between athletics and academics, (between the faculty council and the basketball coach), and between the seemingly different philosophies of coaching and teaching. This commonality of purpose resides on the framework of “learning in order to teach” and “teaching in order to learn.” Indiana University has had the foresight to recruit and retain individuals whose life philosophies purposefully blur the distinction between athletics and academics. Doc Councilman's career at IU has exemplified this philosophy in an extraordinary way.

Tonight, my colleagues and I have been asked to review Doc's scholarly contributions. Not to the sport of swimming per se, nor to the performance achievements of countless young athletes he has coached through out the years but to three diverse scholarly fields, the physiology of sport, the psychology of sport and human biomechanics. Clearly for Doc, these fields are tied by a common thread, that of competitive swimming. Also clear, is that the singular goal at the center of Doc's life was to help swimmers swim faster. “To learn is to teach” and a simple goal... “to swim faster” has lead Doc to initiate concepts applicable to widely diverse fields. Our efforts, mine and Doctors Dapena and Raglin, must be seen as a only a superficial testament to the depth and breadth of Doc's ever soaring intellect. It is difficult if not impossible to condense the inspiration of nearly 40 years of “learning and teaching, of teaching and learning” into 5 or 10 minutes.

From the physiologist's perspective the origin of much of Doc's important writings can be traced back as far as his doctoral dissertation. Completed in 1952 and published in 1955 Doc focused upon the application of force a swimmer develops while swimming. In addition to initiating his theories in biomechanics however, Doc recognized that one of the limiting factors to the application of force was muscular strength. Thus, in 1954 an article entitled “Does weight training belong in the physical education program?” derived from a symposium he organized, illustrated his early interest in the correct techniques for improving muscular strength.

In 1960 Doc detailed dry land exercises appropriate for swimmers. In 1961, he described isometric and isotonic exercises which would optimize the ability to produce force in the water.

These lines of inquiry were developed further by a series of articles leading to the highly important description of Bernoulli's principles in swimming. Doc recognized that force per se is only one component of what the physicist refers to as "work". Work being equal to a "force multiplied by the displacement." The problem, Doc recognized, was in the identification of hand displacement. Through hours of underwater photography and careful observation, it wasn't long before he realized that rather than how much work was done, it was actually how much work could be done in a limited amount of time that was crucial. In the physicists' world this is defined as "POWER". Beginning in 1976, Doc published a series of landmark articles entitled "Power what is it and how to use it" and "Fast exercises for fast muscles and faster athletes." In 1977 he authored "Speed: the third dimension in exercise?" and again in 1977 he published "Swimming Power."

In the early 80s Doc raised the level of sophistication another notch higher. He proposed that although speed and power were important, it was actually an increase in the two throughout the length of hand displacement that was critical. In 1981 he authored, "The importance of hand speed and acceleration in swimming the crawl stroke" and in 1983, "Hand speed and acceleration. A scientific approach to the sport of swimming."

It has been said that "the eye sees only what the mind is prepared to comprehend." (R. Davies). Thus, in parallel with his recognition of the importance of hand force, power and acceleration, Doc developed a number of training devices which would optimize the development of these attributes in swimmers. In the mid sixties he wrote upon and developed and patented several isometric exercise devices. As the factors involved in limiting force through out the hand displacement became obvious, he developed several pieces of equipment which provided isokinetic, or "accommodating resistance." He wrote articles upon the physiological factors associated with speed. He communicated and exchanged ideas with top sport scientists in the world, not withstanding Dr. David Costill of Muncie IN (with us here tonight). This work culminated in 1979 with the development and patenting of the biokinetic bench. This device allowed both acceleration and accommodating resistance throughout the range of hand motion. A true example of "learning and by so doing teach."

In the mean time... in the mean time ...as Marge says...Doc and I somehow found the time to conceive four children... in truth perhaps this was the actual inspiration for Doc's theories on the importance of speed.

In another area of interest and in anticipation of the Olympics in Mexico City, Doc authored a paper entitled "Effect of altitude upon swim performance." Followed in 1975 by a paper which continues to stimulate scientific inquiry and debate "Hypoxic and other methods of training evaluated." While for the better part of the last decade Doc's theories upon hypoxic training were criticized, the latest articles upon this subject vindicate his hypothesis as essentially correct. It would appear that it has taken fifteen years for the technology to become available to completely test Doc's proposal.

Returning for a moment to 1948, Doc became the first coach to apply interval training to competitive swimming. He defined interval training as periods of intense exercise with regulated but insufficient periods of rest. The key being the rest intervals which are too short to allow complete recovery. Prior to this time, swim training consisted of swimming long distance without stopping. Coaches would vary the speed at which the swimmers trained but that's about all. Doc presented how to optimally employ interval training, he hypothesized about the physiological benefits of interval training and explained why interval training was effective in improving swim performance. Like the proverbial pebble dropped into the still water of Royer pool, the implications and debate concerning Doc's "hows and whys" continue to spread ever outward. Researchers to this day continue to test and debate the details and fine points of his theories. In the mean time nearly all of his novel training practices have been universally adopted by the competitive swim community as well as coaches and athletes from a wide variety of sports. The singular goal is "to swim faster." To learn and to teach.

A friend and one of Doc's former swimmers, Dave Tanner recently observed that in 1968, Doc started a new career. Although he had coached the US Olympic swim team to unprecedented victory in 1964, it was in 1968 that Doc began to learn from and teach to the world. Despite nearly 60 prior publications, in 1968 with the completion of "The science of swimming", Doc began to instruct every age group, high school, college team in the world. From this time forth Doc's coaching was no longer limited to the athletes at Indiana. Students from Russia, Germany, Poland, Italy, Czechoslovakia, Hungary, Ireland, Sweden, Chile, Brazil, England, Argentina, Thailand, India, Israel, Greece, Spain, Nigeria, Japan, Mexico, Switzerland, and Austria have come to Bloomington to learn from Doc or rather they have come to Bloomington to be taught by Doc.

Doc has frequently said that his writing has been the easy part,... that the proposing of a theory is much easier than confirming or denying it. He admits that "sometimes I propose things that I don't always agree with... but I think its a good way to stimulate the debate.. a great way to get the answers we need."

If it is true, that as Albert Szent Gyorgi has said, "research is to see what everybody has seen, and to think what nobody else has thought." Then the common images we all see have been interpreted by Doc with a clarity of thought few of us possess. To borrow a phrase from a fellow I think would have enjoyed meeting Doc, Isaac Newton,

"If we have seen farther, swam faster, jumped higher, or tried harder, it is by standing on the shoulders of a giant."

Doc, by learning, you have taught us, and by teaching you have learned for us. We impatiently await your future teachings.

Thank you from us all.