

Developing Scholarship in Athletic Training

Kenneth L. Knight, PhD, ATC*; Christopher D. Ingersoll, PhD, ATC†

* Department of Physical Education, Brigham Young University, Provo, UT 84602-2116; † Athletic Training Department, Indiana State University, Terre Haute, IN

Objective: To outline the essential elements of scholarship, identify its role in the development of the athletic training profession, and encourage athletic trainers to increase scholarly activities.

Background: In the process of writing 2 manuscripts for the *Journal of Athletic Training* about how to write journal manuscripts, we felt something needed to be said concerning why one should write such manuscripts and how individual manuscripts should tie together to advance knowledge. This led us to search the scientific literature for information concerning scholarship and its attainment. Finding no comprehensive discussion on the topic, we then began to investigate components of scholarship and activities that lead to its attainment.

Description: Scholarship, knowledge, truth, and theory are defined. The attributes or characteristics of a scholar delineated

and discussed include seeking to establish truth and develop new knowledge, developing and refining theory, being focused in one's work, being honest about one's work, communicating ideas and stirring thinking, being open minded, and recognizing the difference between scholarship and pseudoscholarship. It is important to promote scholarship among undergraduate and graduate students; numerous suggestions are outlined.

Application: Scholarship is essential to our survival as a profession. The guidelines presented here will help individuals examine and improve their scholarship.

Key words: knowledge, theory, truth, publication, education, manuscript preparation

What is scholarship? The most basic definition is "the process of advancing knowledge."¹ This is done by discovering new knowledge and original insights that add to the world's body of knowledge and understanding; applying existing knowledge to the solution of practical problems; integrating existing knowledge in one discipline with that of another discipline; and developing new and better means for describing, understanding, and presenting existing knowledge.

Scholarship is important to any profession; in fact, it delineates a profession from a trade.² Improving our scholarship has been a concern of athletic training for some time.³⁻⁶ Much of our knowledge base is borrowed from other professions, which is natural for a young profession. As the profession grows, however, so does its responsibility to develop its own body of knowledge. The athletic training profession is at a crossroads. We are beginning to take greater responsibility for defining and developing our own body of knowledge. Doing so is critical because, if we fail to build our knowledge base, we risk losing our standing as professionals and will forever be condemned to be technicians whose decisions are made for them. Athletic trainers must take a greater role, indeed become leaders, in building the body of knowledge relative to the health care of the physically active.⁶

Knowledge building is a natural component of athletic training. One of its basic tenets, problem solving, has always been an integral part of an athletic trainer's responsibilities. For example, injury evaluation is like solving a puzzle; making a pad involves trial and error until one finally derives the correct shape; and selecting exercises that will optimize rehabilitation

requires careful analysis. Throughout the years, athletic trainers have shared the insights of their problem solving through informal discussions, conference sessions, presentations, journal articles, and other educational endeavors. How we take these individual decisions and add them to our collective knowledge base is a key feature of our knowledge growth.

As important as scholarship is, however, it has heretofore not been discussed in the athletic training literature. In fact, even our search of the literature outside of athletic training failed to reveal a comprehensive discussion of scholarship and its attainment. Many authors have discussed the importance of scholarship and activities that lead to scholarship, but no one source has pulled it all together. Our purpose with this paper is to organize these thoughts and ideas into a single source. We see this article as a companion for the 2 articles we published previously in the *Journal of Athletic Training (JAT)* concerning scientific writing.^{7,8}

WHY IS SCHOLARSHIP IMPORTANT?

Scholarship is important to society because, without it, there would be no advancements in knowledge, technology, standard of living, etc. It is important to the profession of athletic training for numerous reasons:

- Our standing as professionals will be enhanced. Professionals understand the *hows* and *whys* and are permitted and expected to make decisions; technicians follow prescribed protocols and directions.^{2,3}
- The standard of care we can provide to the physically active will improve.

- Our reputation, which is determined by what others see (or fail to see) in writing, will be enhanced. Right or wrong, most health care professionals will know us only by what they read.
- Change and progress will come because we focus on our problems, rather than waiting for others to give us answers.
- We will gain prestige as others look to us for knowledge.
- Our claim as authorities on health care for the physically active will be enhanced.

Promoting scholarship is also important to our professional organization, the National Athletic Trainers' Association (NATA), for at least 2 reasons. It helps to establish the NATA as the voice for the profession because its pronouncements are backed by scholarship. If the NATA does not back its claims with scholarship, other organizations will be able to take its place more easily. Second, it gives ammunition for promoting the profession by sharing new knowledge with other allied health care professionals.

THE ELEMENTS OF SCHOLARSHIP

Scholarship should be developed and carried out according to clearly articulated purposes and procedures consistent with disciplinary norms. It must contain some element of originality in the form of new knowledge, new understanding, fresh insight, or unique interpretation. Also, scholarly work must undergo the refining trial of critical review and acceptance by the scholar's discerning peers for the purpose of verifying the nature and quality of its contribution.¹

One of the traditional and most accepted ways of satisfying these criteria is through publication in a recognized, peer-reviewed, scholarly press or journal.¹ However, acceptance for publication by a press or journal is not necessarily in itself evidence of a book or article's quality.

But scholarship is more than research and writing, as will become evident further on. First, however, we need to understand knowledge, truth, and theory.

What Is Knowledge?

Knowledge consists of facts and theories that enable one to understand phenomena and to solve problems.⁹ The pragmatic test of knowledge and one's command of it is, "Can I use this information to comprehend, explain, control, predict, or cope with a given situation?" Knowledge can range from the simplest perception of an object to the most profound understanding of a complex theory.

Knowledge can be obtained from direct personal experience or from the many secondhand sources of information that inundate us constantly with rival claims of usefulness.⁹ Knowledge claims may range from highly reliable to completely unreliable. The secondhand authority upon whom we rely for information may interpret the information incorrectly. Essentially, the reliability of knowledge depends on how close it is to the truth.

What Is Truth?

Truth is "the state of being the case, fact; or the body of real things, events, and facts; actuality."¹⁰ Truth should not be confused with opinion or belief, which portray a person's attitude, because attitudes may or may not coincide with facts.¹¹ Truth is not relative. Beliefs, opinions, and theories may be relative, however.

What Is Theory?

Theory is a generalization or series of generalizations by which we attempt to explain some phenomena in a systematic manner.¹² It is a deductively correct set of truths and beliefs. The criterion by which we judge a theory is not its truth or falsity, but rather its usefulness in stimulating thought and research. Theories sometimes decrease in usefulness in the light of new knowledge, and they are combined, replaced, and refined as more knowledge is made available. They are dynamic structures.

Why Is Theory Important?

Theory provides a framework for conducting research in the following ways:

- serves as the point of departure
- helps identify crucial factors
- aids in defining the research problem; that is, it helps to identify the proper questions to be asked in the context of the specific project
- provides a guide for systematizing and interrelating the various facets of the research
- identifies gaps, weak points, and inconsistencies that indicate the need for additional research

Theory can be used for synthesizing and explaining (through generalizations) research results in the following ways:

- allows one to combine ideas and individual bits of empiric information into a set of constructs that provides for deeper understanding, broader meaning, and wider applicability
- attaches meaning to facts and places them in proper perspective, thus providing needed information for revising or extending the theory if necessary
- provides generalizations that can be tested and then used in practical applications and further research

Data derive significance from the theory or theories into which they fit. Conversely, theories become acceptable to the extent that they enhance the meaning of the data through this process. More adequate theories and unobstructed facts are secured; theory stimulates research, and, conversely, research stimulates theory development and theory testing.¹²

Confused theory, based on partial truth rather than truth, will lead to techniques that are partially effective or ineffective. Thus, the health care provided is less than optimal.

ATTRIBUTES OR CHARACTERISTICS OF A SCHOLAR

Belief in, and adherence to, the concepts of knowledge, truth, and theory are the fundamental building blocks of a scholar. In general, a scholar is rigorous and thorough, devoted to discovering and learning, and determined to profess or share that which is learned.¹

Specific attributes or characteristics of a scholar are in the Table. We do not feel that one has to possess all of these characteristics to be considered a scholar. Scholarship, like fine wine and cheese, develops over time; it is not something that is bestowed upon a person. Rather, one becomes a scholar. In the process of becoming a scholar, a person grows (moves along a continuum) from a beginning “scholar wannabe” to a mature, seasoned sage. We must continually develop within ourselves scholarly attributes, so that we can be increasingly successful in our individual search for truth. People progress along the continuum at different rates and progress to different endpoints. But no one progresses to the point that he or she cannot continue to develop scholarly abilities.

PROMOTING SCHOLARSHIP IN ATHLETIC TRAINING

How does one become a scholar? By believing, acting, becoming. One must learn what a scholar is and the attributes of a scholar and act like a scholar by practicing the attributes, letting the attributes become part of oneself.

All of us can improve our scholarly abilities by practicing more of the scholarly attributes and by practicing them at a deeper level.

Scholarship Promotion by the NATA

The NATA is promoting scholarship within the profession in many ways. It provides a forum for scholars to discuss and debate their work (eg, at national conventions); publishes a scholarly journal (*JAT*) in which scholars can publish their work and others can observe the scholarship; provides funding to support scholarship; and increases the opportunities for free communication sessions at meetings. The NATA made a major contribution to scholarship when it approved the *NATA News*, which allowed the *JAT* to remove Association business and concentrate its efforts on scholarly matters.

Implementing Scholarship in Athletic Training Curricula

Scholarship should be an important part of every athletic trainer’s education, more so in graduate education than in undergraduate education. The concepts should be introduced during undergraduate studies and fully integrated into graduate studies. Educators can promote scholarship in many ways. Not

Scholarly Attributes or Characteristics

Seeks to establish truth and develop new knowledge

- Through original research
- By synthesizing and integrating established knowledge in a new or unique way
- By reexamining commonly held ideas, concepts, and theories to determine whether they are based on truth

Develops and refines theory

- Bases one’s research on theory and emphasizes what a set of data means in addition to how it looks, feels, appears, etc
- Explains how one’s research results relate to other known data and theories rather than leaving the results for others to interpret

Is focused in one’s work

- Has a specific area of investigation that narrows with time; a scholar’s research interests do not randomly change from topic to topic

- Is meticulous in detail

Is honest about one’s work

- Clearly admits assumptions upon which one’s work is based, speculation about the meaning of the results, and the limitations of one’s work and its applications
- Understands that discovering truth is more important than convincing others that one’s interpretations are correct
- Is motivated by refining and expanding an area rather than protecting one’s personal interpretation of the idea
- Is more interested in the whole truth than in others’ perceptions of one’s scholarly abilities
- Accepts all truth as it becomes known, even if it contradicts one’s previously held theories or ideas

Communicates ideas and stirs thinking

- Is more interested in the quality of one’s publications than the number of them
- Does not rush papers into publication; rather, labors over them to improve their quality and readability
- Knows that sounding “scholarly” is not as important as effectively communicating ideas; understands that using simple words often enhances reader and listener comprehension
- Points out assumptions, limitations, and speculation in papers so that readers can clearly put the work into perspective
- Is not afraid to stick one’s neck out if data appear to conflict with accepted theory and ideas
- Is not afraid to speculate, but does not confuse speculation with truth
- Encourages others to join in searching for truth

Is open minded

- Follows the philosophy of Francis Bacon⁹: “Read not to contradict and refute, nor to accept and take for granted, but to weigh and consider.”
 - Is willing to listen to alternatives with an open mind; is open enough that one can defend either the pro or con of an argument and is willing to change positions as new truths are uncovered
 - Does not ignore data that do not fit expectations, but rather seeks to integrate all truth
 - Recognizes the difference between true scholarship and pseudoscholarship
 - Knows that presenting information is not necessarily scholarship. For instance, most reliability studies, testing the accuracy of instruments, product research, and technique articles are important pursuits, but are technical support of scholarship, not scholarship itself. Scholars deepen and broaden theory.
-

all the following activities apply to every student, but every student could benefit from any of them:

- Assign students to read this article and its 2 companions.^{7,8}
- Involve students as research assistants to faculty and graduate students.
- Help students understand the scientific method of problem solving. This will not only introduce them to scholarship, but also help to sharpen many of their athletic training skills.
- Teach students how to read and interpret journal articles and then require them to do both.
- Encourage students to attend the free communication sessions at conferences.
- Introduce the *JAT* style of manuscript construction and require students to write class papers following *Journal* style.
- Encourage students to write for the *Journal of Athletic Training* Student Writing Contest.
- Include critical thinking skills in all classes.
- Have students take a course in research methods.
- Conduct original research as a project or a thesis.

A FINAL WORD

Scholarship must become more a part of the professional lives of athletic training professionals, both clinicians and educators. Both beginning and mature scholars should strive to

develop their scholarly skills; there is no endpoint. As we do so, we grow, the profession grows, and health care improves.

REFERENCES

1. Office of Research. *A Model for Directing Scholarly Work at Brigham Young University*. Provo, UT: Brigham Young University; 1994.
2. Parsons T. The professional and social structure. *Social Forces*. 1939;17:457-467.
3. Delforge GD. Athletic training: a profession? Keynote address presented at the NATA's Annual Meeting and Clinical Symposia. June 1983; Denver, CO.
4. Knight KL. Research in athletic training: a frill or a necessity? *Athletic Training, JNATA*. 1988;23:212.
5. Osternig LR. Research in athletic training: the missing ingredient. *Athletic Training, JNATA*. 1988;23:223-225.
6. Knight KL. Expanding our body of knowledge. *Athletic Training, JNATA*. 1990;25:8.
7. Knight KL, Ingersoll CD. Structure of a scholarly manuscript: 66 tips for what goes where. *J Athl Train*. 1996;31:201-206.
8. Knight KL, Ingersoll CD. Optimizing scholarly communications: 30 tips for writing clearly. *J Athl Train*. 1996;31:209-213.
9. Van Dalen DB. *Understanding Education Research*. 3rd ed. New York, NY: McGraw-Hill Book Company; 1983:1-12.
10. *Merriam Webster's Collegiate Dictionary*. 10th ed. Springfield, MA: Merriam Webster, Inc; 1996:1269.
11. Barry VE. *Invitation to Critical Thinking*. New York, NY: CBS Publishing; 1984:181-183.
12. Wiersma W. *Research Methods in Education: An Introduction*. 4th ed. Boston, MA: Allyn Bacon, Inc; 1986:17-19.