A New Vision for the Study and Practice of Skilled Motor Performance

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We can start with two core, interrelated problems. We know everything we need to know about our field, except for two minor unresolved questions:

1. What is our focus of study?
2. What do we call our field?

Minor points, right? Everyone wants a one-word name for a very complex field. Perhaps we need to be reminded of the old aphorism: "Any philosophy that can fit on a bumper sticker should stay there."

I suggest that our field of study is "skilled motor performance." But, let's leave that argument behind for now, as I am more concerned with how we prepare people to work successfully in the field.

To understand where we are today, and why these simple questions are important, we need to step back and look at the last half century of what we nostalgically refer to as "physical education". Because my original field was history, and also because I have been a member of AAHPERD for 42 years, I feel I can at least roughly describe where we were and how we ended up here, perhaps stuck on a traffic island in the great freeway of academia.

For the first roughly 80 years from the founding of AAHPERD the field was physical education, and we were concerned primarily with teaching and coaching physical activity. The original impetus for the teaching was the improvement of student health for the purpose of improved learning capabilities in the academic sphere. Many of the early leaders of AAHPERD were M.D.s, albeit trained in a more fly-by-night pattern than today's physicians. You history buffs may remember that the frontier doctors were often also the local barbers, and vice versa.

By the 1960s the field was suffering from decades of a feeling of academic inferiority. Professors at the growing research institutions feared that they were not sufficiently respected because they suffered the indignity that brought horror to research institutions–they were (gasp! The shame!)...practitioners. They actually taught people to DO things. The more practical or applied your field is, the more distasteful it is to research university professors.

So what do we do? How can we make ourselves more like the theorists in respected departments? Simple–we will create a discipline, an academic field, and throw off the slave bonds of the practical. We, too, can produce graduates with no marketable skills

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Okay, that's a bit snide and heavy-handed, even if it does come uncomfortably close to the truth. Let's be a bit more distant and objective.

What was "physical education" has expanded massively in the last 40 years. Little side areas of interest became primary areas, then specialities and sub-disciplines. Unfortunately we have always stated our "area of focus" arguments too narrowly. Most fields do not change their names. The sad reality is that the primary problem with the name "physical education" was a long history of too many lousy teachers negatively impacting too many generations of students

The discipline movement arose from the influence of concerned faculty at research institutions. Their expressed concern was that physical education was a Rodney Dangerfield subject; that is, it got no respect. Why, you may ask? Because it was not sufficiently scholarly. It was not known for serious, rigorous research that expanded the bounds of knowledge.

While we can successfully argue that a significant portion of the concern grew from a fear of seeming unimportant in their home institutions (i.e., failed snobbery), there was still a solid core of truth to the charge. As an adjunct of Schools of Education, whose academic standards are traditionally among the lowest in most universities, what limited research was done was usually applied studies aimed at solving particular (often small) practical problems.

This concern of research university faculty led to three things happening, each leading to the next:

1. Franklin Henry (1964) wrote a seminal article (taken from an earlier presentation) calling for the development of an academic discipline of physical education.
2. The American Academy of Physical Education in 1989 recommended that the new discipline be called "Kinesiology." The group renamed itself the American Academy of Kinesiology and Physical Education.
3. A series of papers (Newell *et al*.) were produced and published in *Quest* in 1990 arguing that Kinesiology was the best name for our field, just because, and creating a field for it almost from the whole cloth. Rejoicing throughout the land was limited, mostly coming from research university professors.

Franklin Henry's article, "Physical Education: An Academic Discipline", called for the development of "*this cross-disciplinary field of knowledge*," rather that the various separated sub-disciplines we see today. He specifically noted that it was not an amalgam of knowledge from other disciplines. The first program to try the discipline approach for its major was the "sport science" program at Brockport State, described in a 1971 JOHPER article by Clark Whited. Whited wrote that "Kinesiology, or the study of human movement, has long been an integral part of professional physical education curriculums, but it has never attempted to

commandeer the field."

By 1978 Franklin Henry was looking at the 14 years since his call for a discipline and finding that the picture was not as pretty as he had hoped. There was considerable discord, and an attempt to settle on a single descriptor for the focus of our field, published in *The Academy Papers* in 1973, was unsuccessful. People could not agree. Indeed, a 1989 study by Stan Brassie and Jack Razor found something like 115 different titles for departments across the United States (Fig. 1). Even after 35 years, no term was dominant.

Also interesting is that just before the call by the research university for kinesiology as a name for the field, only one of 318 physical education programs reported that their department or unit was named "Kinesiology", while 287 (90.25%) included "Physical Education" in their title (p. 84). Of the 52 units that were considering changing their title, only 6 (11.5%) were considering "Kinesiology", while 18 (34.6%) were considering "Exercise Science" or "Sport Science", while another 14 (26.9%) were considering either "Human Performance" or "Human Movement" (p. 86). Indeed, the 52 units considering changing their titles were out of 309 units (16.8%) that responded to the question. Thus 6 of 309 units were considering "Kinesiology" as a new title, which would have given a total of 7 of the 318 units that might have been "Kinesiology" (2.2%).

Over that time a number of sub-disciplines had organized, creating national and international scholarly associations devoted to the expansion of knowledge within their single sub-disciplines. One of the problems created by the new groups was that many of the specialists turned their attentions away from the greater field and focused solely on their new sub-discipline groups. This caused the fracturing of the field. In 1985 Shirl Hoffman wrote of the danger that the specialization that was fragmenting the field could destroy our graduate programs.

In the days of old (50 years ago) most people in the field were members of what today is AAHPERD. Many university faculty, especially those at research universities were also members of the NCPEAM [National College Physical Education Association for Men] or the NAPECW [National Association for Physical Education of College Women], depending on their sex. Again, this was in the olden days when men and women were loath to share roles across the sexual divide. At some point life (and perhaps the pernicious influence of Title IX) led them to unite in what has become NAKPEHE [the National Association for Kinesiology and Physical Education in Higher Education]. Some scholars were selected as members of the American Academy of Physical Education [whose name was extended to include Kinesiology].

Since the foundation of the discipline groups many members have moved to ally with the ACSM [American College of Sports Medicine, mostly those in the science-focused sub-disciplines]. Others stay largely within the confines of their sub-discipline group. The result is a field whose potentially contributing researchers are often involved in little or no collaboration for or contribution to the greater field of which they are ostensibly a part.

Rather than contribute to the scholarly development of the whole field, instead the new areas focused on self-aggrandizement of their sub-discipline, and in doing so, largely abandoned any interest in a unified greater field. We are human, and one of the human weaknesses is a tendency to view our personal interests as more important, more significant, simply because they are *our* interests. Instead of contributing to a greater field, each group tended to split away, mingling only with the members of their own little group. Among the flaws that resulted in the weakening of the field were:

1. The field lost the potential contribution of many specialists, and
2. In my view, the specialists became *less* important even as they believed they were becoming more important.

Why do I say they became less important? Because in pulling apart into their own areas of focus, they largely became subsets of established fields in which most of them were insignificant contributors.

I am a Charter Member of NASSH, the North American Society for Sport History. As an example of the tendency to self-aggrandizement, in its early years a group of the younger scholars wanted to set up a controlling sub-group composed of the "serious" scholars; that is, the "real" sport historians–the "important" people. Fortunately, the group as a whole had more experience and wisdom, and they rejected the move. They valued (and still do) inclusiveness over snobbery. Self-important people never nurture potential talent.

However, for us as a field, the rise of "kinesiology"beckons –when a field tries to improve its reputation by changing its name to a single subject, and a name that is meaningless to the public. Shades of "Human Ecology"!

Just before my mother died I initiated a small endowed scholarship in her name at her *alma mater*, East Carolina University. She graduated in 1941 in home economics and general science, and her first job was as a rural county home economics agent. Turns out there is no longer a department of home economics in a teachers college that is now a research university known for cutting edge robotic surgery in its medical school. The former program is now housed in the College of Human Ecology.

Well, I didn't want to fund a scholarship in human ecology. I don't even know what that would entail. All of us deal with some aspect of human ecology, but it sounds too much like I might be encouraging someone to preserve the human wetlands.

Fortunately, there is among those human ecologists a Department of Child Development. That I can understand,

and my mother was a great believer in family and the careful raising of children, having raised four peculiar ones of her own. Sometimes we can be too clever for the outside world in our striving for importance.

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Okay, focal areas wandered off. So what?

The original premise was cross-disciplinary research which would expand our knowledge (with resulting improvement of academic programs and prestige of its professors) of our field. Indeed, as medical research increasingly adapts this model, our field flees from it, preferring to hide in the loving embrace of like minds, most of them unconcerned with a greater world than their own narrow little kingdoms.

The result, contrary to Henry's dream, is that while we are more scholarly in pieces, the field itself has been to a certain degree defiled or destroyed, not elevated, and the expected academic prestige exists largely in the imagination of a few science specialists who do not realize that they have become biologists.

In one of my early jobs I was at an institution that was attempting to develop a more scholarly model, and it taught as subjects each of the new sub-disciplines. It had developed a very useful exit course called "Synthesis", designed to bring all of those acquired bits and pieces together into some kind of unity.

The first problem they encountered was the students' criticism that while the synthesis course was great, there should have been a similar introductory course for freshmen to explain why they were taking all of those bits and pieces in the first place.

The second problem was that the program graduated theorists who had no training useful to any available job, but that's another story. Who cares if our graduates can find jobs, right? What university ever asks its faculty about graduate employment rates?

The faculty formed a committee to design an introductory course. I was added as an *ad hoc* member because I had recently written an introductory textbook. I quit the committee after a year, realizing that they would never produce a course. The core problem was academic jealousy and conceit. No one seemed interested in what their freshmen students needed to understand about the larger field, because they did not care about it themselves. Their committee time was spent in turf battles over which sub-discipline would get how great a share of the class time to sell itself. To some degree this mentality still seems to pervade the field.

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I have griped about some problems and concerns so far, mostly to illustrate elements of why we are stuck out on this bypass as a field, but now let's turn to today. We know where we are, and we know how we got here, even if we don't like how the descriptions sound.

Ultimately, the question is simple: What do we do now?

I didn't say that the answer was simple. If we can't agree on our focus of study or our field's name after one-third of a century, the answers won't be easy. So let me try to focus it into two questions that might be easier to answer:

1. What do we want our graduates to know when they graduate, and
2. What do our graduates want to do with the knowledge that we give them?

I am not asking about their specialized knowledge for a job, on which we sometimes place too much focus. What do they ***all*** need to know, whether they want to teach PE, be a sport coach, or become a physical therapist?

What should be the core knowledge for anyone in our greater field?

And, how do we give it to them?

I believe we have lost our realization of the need for a common core. Yet universities require a core curriculum for all students. Accounting major, art student, biologist– everyone has to take the core.

When I was a history major (my undergraduate and one of my graduate degrees), all majors had to take a core in the major: A year survey of Western Civ, a year survey of United States history, and a course in historiography (the study and writing of history). Even if your interest was Chinese history, you took that core first.

My department [Exercise Science] has six major programs, each one a degree program. But every student takes a core of courses, then builds their major focus atop that core, shared foundation.

I am beginning to wonder if we as a field have fallen prey to course growth, where every new thing means a new course, and the old ones never go away. Perhaps it is time to look at what we teach and ask ourselves, "Do we need a full course in this?" Just because there is a textbook does not mean it has to be a full course to gain useful knowledge.

I started thinking in terms of themes and tasks. What are the themes of knowledge that our students need to understand? What core of knowledge do those themes entail? What tasks do our graduates need to be able to do?

I realize that this seems exceedingly fuzzy, so let me give an example of an Exercise Science or Kinesiology major based on themes. I have suggested six parts, five of which are planned thematically (Fig. 2).

Introductory Course: Overview and Synthesis

Thematic Core

1. The Analytical Process
2. Movement Skills Across the Lifespan
3. Physical Performance in Life and Sport
4. Movement in Society
5. Movement and Meaning

We might add a synthesis course as part of an exit project.

This may still seem unclear, so let me expand to give an idea of the areas of content which might be included in these themes (Fig. 3).

Introductory Course: Overview and Synthesis
- Where you are going — One Semester
- How you will get there = What you will learn
- Why we do it this way = How it fits together:
  - The integration of human movement and performance studies
- What you can do with it when you are done

Thematic Core
1. The Analytical Process [How we study the field]
   - Research Methods — One Year
   - Measurement and Evaluation
   - The Process of Scientific and Technical Writing
2. Movement Skills Across the Lifespan
   - Fall: The Growing Body: 0-18 — One Year
   - Spring: Adulthood (to Death)
   - Motor development and learning; biomechanics
3. Physical Performance in Life and Sport
   - Fall: The Growing Body: 0-18 — One Year
   - Spring: Adulthood (to Death)
   - Exercise physiology
   - Nutrition
4. Movement in Society — One Year
   - History, psychology, sociology
5. Movement and Meaning — One Semester
   - Philosophy, ways of understanding, perfect moment

Possibly a synthesis course as part of an exit project.

On a semester basis, this is about 24 hours. To this core are added the specialized courses required for a specific degree program.

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As a second example, suppose we want to offer a new major, one in Sport Coaching. In drafting a rough design for such a major I broke it into four core areas (Fig. 4):

1. Common Core
2. Science Core
3. Focal Core [the specialized major content]
4. Supplementary Core

For the content and traditional course areas included in the program, we have the following (Fig. 5):

I. For the Common Core, we require four traditional courses:

1. Introduction to Exercise Science
2. Applied Technology for Exercise Science
3. Program Management
4. Research Methods

II. For the Science Core, we require two traditional courses:

1. Applied Exercise Physiology
2. Applied Biomechanics

Basic Anatomy and physiology are biology courses that satisfy the university's science requirement.

III. For the Supplementary Core, we require three traditional courses:

1. Care and Prevention of Athletic Injuries
2. Sport and Exercise Nutrition
3. Sport Psychology

IV. For the Sport Coaching Focal Core, there are four thematic courses and one traditional course.

1. Design of Strength and Conditioning Programs
2. Design of Speed and Endurance Programs
3. Design of Motor Skill Development
4. Design of Long Term Comprehensive Training Programs
5. Practicum [in a specific sport coaching setting]

Obviously this is not the only way to arrange these instructional units. The Supplementary and Science Cores can be brought into the Focal Core, and a redistribution into a smaller total number of courses, depending upon how you see the major components of knowledge relating to one another.

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The real trick is to think outside the box, getting away from the traditional course designations and thinking, instead, of tasks and knowledge relationships. We need to accept that there are multiple levels of necessary knowledge, depending upon where and how that knowledge is applied.

The task of creating an innovative program is extremely difficult. The greatest challenge is not the intellectual, theoretical design, or deciding how to apply it to a real world. The real challenge is that universities by their nature discourage innovation. It upsets administrators; the idea of real innovation may actually terrify them. For most administrators, new and different means risky.

As a practical example, I was a member of an oversized committee that was to revise my university's core requirements after 30 years with no changes. We were, in fact, charged by the administration to “think outside the box” and to “be innovative.” In fact, they were making the self-serving sounds we usually hear from administrators.

After two years of work, the changes scarcely rose to the level of the cosmetic.

Why? No good ideas from the committee members?

Actually, a number of innovative and substantive suggestions were made. And in each case, after a certain amount of discussion around the table, the representative of veteran's affairs would stop every new idea dead with the

same question: How will that course transfer to other institutions? Otherwise, people might not enroll at our school.

In short, we want innovation, so long as everything we do is done at every other school in the United States, thus easily transferred. That was the administration's concept of innovation.

We need a new paradigm for what our field wants to accomplish. Every university program has different students with different goals and potentialities. This provides a theoretical structure to direct curricular decisions. Our goal is to develop a common core of knowledge that binds all areas of our field together, then have each area move on to a focus on its specialized focal areas, but without losing sight of the commonalities that bind the field into a unified interest. Those areas use different levels and different goals to meet different program needs.

The traditional approach to curricular development has been to modify what we do currently to meet a changing need, a new trend or a new goal. The result is that we fail to back away and consider a quantum leap. Instead, we go for the incremental modification. The result is a fractured field. As an example, the new field of kinesiology is not really developed as a field. It is simply a major that turned its face away from the traditional concerns of its originating field and directed it instead toward the health sciences.

Not to put too fine a face on it, but the typical kinesiology program is essentially a variation on the old pre-med biology major. The self-defined kinesiologists took someone else's wheel, added some chrome, and claimed they had invented the wheel. I'm not being mean here. As a department chair for the past 20 years, now retiring, our kinesiology major does precisely that. Every one of our students is aiming for a health sciences professional program, mostly physical therapy, after graduation.

Indeed, that is what happened at my doctoral institution, the University of Oregon. Once one of the best known broadly-focused physical education (and health, recreation, dance and gerontology) programs in the world, it was eradicated by a new president and new provost who wanted to save money and were ignorant of its international reputation. Today it survives as a "Department of Human Physiology." Again, another Biology Pre-Professional program, with a few bits and pieces from our field. When I donate money to the University of Oregon, it is to an endowed scholarship in the English department.

We must look again at Franklin Henry's "discipline of physical education" and accept that there are multiple levels of necessary knowledge, depending upon where that knowledge is to be applied after graduation. The process of curriculum development should examine the goals of the field and of its graduates, then teach them to learn by this process (Fig. 6):

Core Knowledge + Query + Analysis + Synthesis = New Knowledge

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One of the great problems of the push for our field becoming kinesiology under the influence of desperate professors at research universities is that we often lose sight of what we are really studying and of what our students will do with it once they leave us. One of those problems is losing sight of the holism of the human. Don Hellison (1991) called for an integration of study, a return to an understanding that the body is not simply a sum of its parts. Scott Kretchmar (2007) has spoken of our sub-disciplines as silos, warning of the dangers of what he called "silo-limited, in depth graduate training."

Jeff Ives and Duane Knudson (2007) have written of the need for greater disciplinary balance in exercise science, pointing out weaknesses of student preparation because of an over-focus on exercise physiology. As they put it, "The drift away from a balance and integration of academic preparation in exercise science represents a threat to the acceptance of exercise science graduates as exercise professionals." Along that line, Benoît Bardy (2008) in writing of the European perspective on kinesiology notes that the term is used almost exclusively in North America, that is, the United States and Canada. The most common international terms are still "physical education" and "sport sciences". I am familiar with that reality from giving several papers at the annual conference of the European College of Sport Science.

I coached track for many years; I have written one book that was required reading as part of the coach certification structure of USA Track & Field. One of the realities that I came to accept is a concept exemplified by a Swiss coach who called the human body an ecosystem. At many levels training is a simple process of stimulus and response. As Bill Bowerman used to say, "*Take a simple organism, such as a freshman, apply stress, and observe the response*." Yet in reality training is massively complex, because so many things impact both the process and the outcome. The workouts are, in many ways, only the tip of the iceberg.

For years I have told coaches that we know far less than we think we do of how the human body works, in part because we hold to the too-human belief that under it all, everything is really very simple. But it is not.

The human body is incredibly complex, as are the external factors that impact on it. Almost 20 years ago I was looking at the potential of artificial intelligence for developing sport coaching software programs (Freeman, 1990, 1992). The reality is that even today such programs are little more than nested Powerpoint slides. The reason is the incredible complexity of interrelated factors, many of which we have not identified, in some cases because we have not yet noticed their existence.

As a result of my increased awareness of this complexity I wrote of the similarity of understanding the workings of the human body in terms of Chaos Theory (Freeman, 1994). The

idea of Chaos Theory is that inside chaos there is order. The complexity that is chaos makes it extremely difficult to locate that order, but in nature we discover the replication of patterns. The micro scale is often a mirror of the macro scale. My training program on an annual basis is a larger version of the rise and fall of replicated or nested smaller patterns that come together to produce a final result.

It is the factor of "The Law of Unintended Consequences." We try a great idea, and it fails because there are other factors or relationships there that we never realized, until we triggered their mechanisms. Think of the annual spring floods in the United States, which are often made worse by the levees that were created to prevent them. Turns out that the levees prevent nature from dissipating the effect of floods by focusing high water just where you want to prevent it.

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So, let's jump to accreditation standards, with the same concept. We have a common problem of accreditation standards: We see parts, but not the whole. We create a series of pieces, bits of specific knowledge and skills, then believe that by putting those pieces together, we achieve a working whole.

Most accreditation standards and competencies result in Stage 1 of Frankenstein's Monster: Everything is sewn together, but we forgot the role of electricity.

We have the route to a solution: Examine the finished product (the graduate at whatever level), then determine what makes them adept. There are ***themes*** that add up to what we need to be able to do. As an example of the process, we proceed through the stages or steps (Fig. 7):

1. Analysis
2. Synthesis
3. Proposed Solution
4. Application
5. Evaluation
6. Revision

These are, of course, variant versions of the Scientific Method. The question is: What do we need to know and understand, what knowledge and skills do we need, to effectively and successfully ***apply*** the Scientific Method?

Are our graduates able to learn from observation?

Are they able to analyze and prescribe?

We need to find a common core, which has been a problem since the birth of the disciplines (Freeman, 2001, Chapter 1). There has been little movement or progress along that line since 1973. Then we were searching for a focus for the discipline, now it is career track foci.

We need to come at this from another angle: What is the ultimate ***use*** of our degree programs? Essentially there are two tracks (Fig. 8):

1. Applied work
2. Scholarly/theoretical research

The applied work has two foci:

1. Work of a teaching/pedagogical nature (including coaching)
2. Work in medical fields

We need to get away from some of our professional prejudices if we want our field to be taken seriously.

1. None of those three is "superior" or "more important" than the others– to claim otherwise is pure snobbery.
2. The shakiest of the three as "our field" is the third, the health science/medical focus. In that area we have simply pushed our way into already established fields, claiming that we are somehow unique. That claim is open to serious question. Even with Athletic Training programs, as they slide more into becoming physical therapy wannabes, they risk losing their uniqueness, their professional identity.

What we need to accept is that our two major functions have not changed philosophically during the almost a century since the first doctoral program in our field appeared (Fig. 9).

1. To improve physical performance and health, for a purpose, and
2. To extend our knowledge of:
   a. How it all works, and
   b. Hope to apply it more effectively.

A very interesting parallel to what we need to do is a process currently under way in Europe. Because they have many different nations, each with its somewhat unique approach to university education, they are dealing with the problem of creating university degree programs that are transportable in a global economy. More than we in the United States, they are concerned with the ability of their graduates to find employment 100 miles away, in another nation with another language and another educational design.

Their response has been to try to find commonalities of goals, so they can project what people want to do for a career, what types of knowledge and skills they will need, and use those determinants to drive the design of the academic programs. As one of their documents (Hardman, Klein, Patriksson, Rychtecky & da Costa, 2008) put it:

> *The Bologna Declaration (June 1999) set in motion an agenda of policy reforms with a view to making European Higher Education more compatible and comparable, more competitive and more attractive across Europe...an ERASMUS Thematic Network project...to 'Align a European Higher Education Structure in Sport Science' (the AEHESIS Project), one sector of which is "Physical Education"...the sector's prime aim "having in mind the necessity of enhancing the process of recognition and European integration of qualifications" was to formulate a model curriculum for Physical Education Teacher Education (PETE), which would be applicable across Higher Education*

Institutions in Europe involved with the preparation of teachers.

As an example of their implementation of the Bologna Process, there is a breakdown of how coach education would be designed, starting with a suggested classification of levels of coaching roles, from apprentice coach to master coach, there is an outline framework for developing coaching qualifications, there is a competence framework for coaching (with activities, tasks and competencies), there is a general framework for the recognition of coaching competence and qualifications, and there is a framework for the licensing of coaches.

As an example of the processes that they have set up, I have illustrations from their website of their six step model to collect information (Fig. 10), their five processes framework (Fig. 11), their suggested classification of coaching roles (Fig. 12), their competence framework for coaching (Fig. 13), and their overview of the PETE program of study (Fig. 14).

A major point here is that they are trying to agree on process. They are not dictating a set curriculum that all will follow. Instead, they are saying that when graduates leave a university these are the things they should know and be able to do, these are the roles they should be ready to fill. How you get them there is up to you. It is stating in broad terms the outcomes.

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So, back to us and our world. Do we have these agreements in the United States. In the past AAHPERD had major conferences to set agreements on curricular outcomes. I have copies of three of them, 1962 and 1974 for the undergraduate curriculum, and 1967 for the graduate.

Now we are developing competencies or learning outcomes in individual areas, such as PETE and Sport Management. But why have we not done this research to determine the greater roles and outcomes that lead to our competencies?

Also critical, to me, is who are the people who determine these things? They should be the people who turn out the product. The last thing I want in any of my fields is a program designed by a theorist. The outcome is like the old joke that a camel is a thoroughbred race horse designed by a committee. Or a research specialist.

With all due respect to high-level researchers, I do not know of a single Olympic champion or world record holder coached by a researcher. Theoretical knowledge is just that. It may not, in fact, be useful in any way in the real world. That does not discount its value, just makes note of where it is most useful.

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More real world. What do we need to do first (and second)? My starting suggestions are two basic needs.

1. Develop a mission statement of what our field seeks to do. We have focused on the importance of the name, but our range of interests under this tattered umbrella is too broad to worry about the distinction of a name. For example: What is the real difference between “physical education” and “exercise science”, or “exercise and sport science”. And between “exercise science” and “kinesiology” (or as I call it, “pre-professional biology, Track 2”).

My department has students who want careers as:

Teachers of physical education
Sport coaches
Athletic trainers
Managers of sport & exercise programs
Sport businessmen
Physical therapists
Medical doctors
Chiropractors

While these are widely differing interests, they are also common, in that most deal with the development and maintenance of the sporting body–simply from different aspects of the operation

2. Identify a common core curriculum that *all* branches need to know. I have already given examples of them.

Donna Woolard will discuss the practical, real world application of all of this.

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Figure 1
Titles of Physical Education Units in 1989 Brassie & Razor Study

Different titles used by units	115
Units named "Kinesiology"	1 of 318
Unit names including "Physical Education"	287 of 318 (90.25%)
Units considering changing their title	52 of 309 units (16.8%)
Units considering changing their title to:	
"Kinesiology"	6 of 52 (11.5%)
"Exercise Science" or "Sport Science"	18 of (34.6%)
"Human Performance" or "Human Movement"	14 of 52 (26.9%)
Units using or considering title of "Kinesiology"	7 of 318 (2.2%)

Figure 2
Kinesiology/Exercise Science Major by Themes

Introductory Course: Overview and Synthesis
Thematic Core
1. The Analytical Process
2. Movement Skills Across the Lifespan
3. Physical Performance in Life and Sport
4. Movement in Society
5. Movement and Meaning

Possibly a synthesis course as part of an exit project

Figure 3
Kinesiology/Exercise Science Major by Content Themes

Introductory Course: Overview and Synthesis — One Semester
- Where you are going
- How you will get there = What you will learn
- Why we do it this way = How it fits together:
  - The integration of human movement and performance studies
- What you can do with it when you are done

Thematic Core
1. The Analytical Process [How we study the field] — One Year
   - Research Methods
   - Measurement and Evaluation
   - The Process of Scientific and Technical Writing
2. Movement Skills Across the Lifespan — One Year
   - Fall: The Growing Body: 0-18
   - Spring: Adulthood (to Death)
   - Motor development and learning; biomechanics
3. Physical Performance in Life and Sport — One Year
   - Fall: The Growing Body: 0-18
   - Spring: Adulthood (to Death)
   - Exercise physiology
   - Nutrition
4. Movement in Society — One Year
   - History, psychology, sociology
5. Movement and Meaning — One Semester
   - Philosophy, ways of understanding, perfect moment

Possibly a synthesis course as part of an exit project

Core by Themes = about 24 semester hours

Add specialized courses specific degree program

Figure 4
Sport Coaching Major Core Design

1. Common Core
2. Science Core
3. Focal Core [the specialized major content]
4. Supplementary Core

Figure 5
Sport Coaching Core Design with Content

I. For the Common Core, we would require four traditional courses:
    1. Introduction to Exercise Science
    2. Applied Technology for Exercise Science
    3. Program Management
    4. Research Methods
II. For the Science Core, we would require two traditional courses:
    1. Applied Exercise Physiology
    2. Applied Biomechanics

    Basic Anatomy and physiology are biology courses that satisfy the university's science requirement.
III. For the Supplementary Core, we would require three traditional courses:
    1. Care and Prevention of Athletic Injuries
    2. Sport and Exercise Nutrition
    3. Sport Psychology
IV. For the Sport Coaching Focal Core, there are four thematic courses and one traditional course.
    1. Design of Strength and Conditioning Programs
    2. Design of Speed and Endurance Programs
    3. Design of Motor Skill Development
    4. Design of Long Term Comprehensive Training Programs
    5. Practicum [in a specific sport coaching setting]

Figure 6
The Process of Learning in a Field

Core Knowledge

+

Query

+

Analysis

+

Synthesis

(Produces)

New Knowledge

Figure 7
The Process of Pretty Much Everything

1. Analysis
2. Synthesis
3. Proposed Solution
4. Application
5. Evaluation
6. Revision

Figure 8
The Focus of Major Programs

Major programs fall into one of two tracks:

1. Applied work
2. Scholarly/theoretical research

Applied work has two foci:

1. Work of a teaching/pedagogical nature (including coaching)
2. Work in medical fields

Figure 9
Our Two Major Functions as a Field

1. To improve physical performance and health, for a purpose, and
2. To extend our knowledge of:
    a. How it all works, and
    b. Hope to apply it more effectively.

Figure 10
AEHESIS Six Steps Model (A6SM)

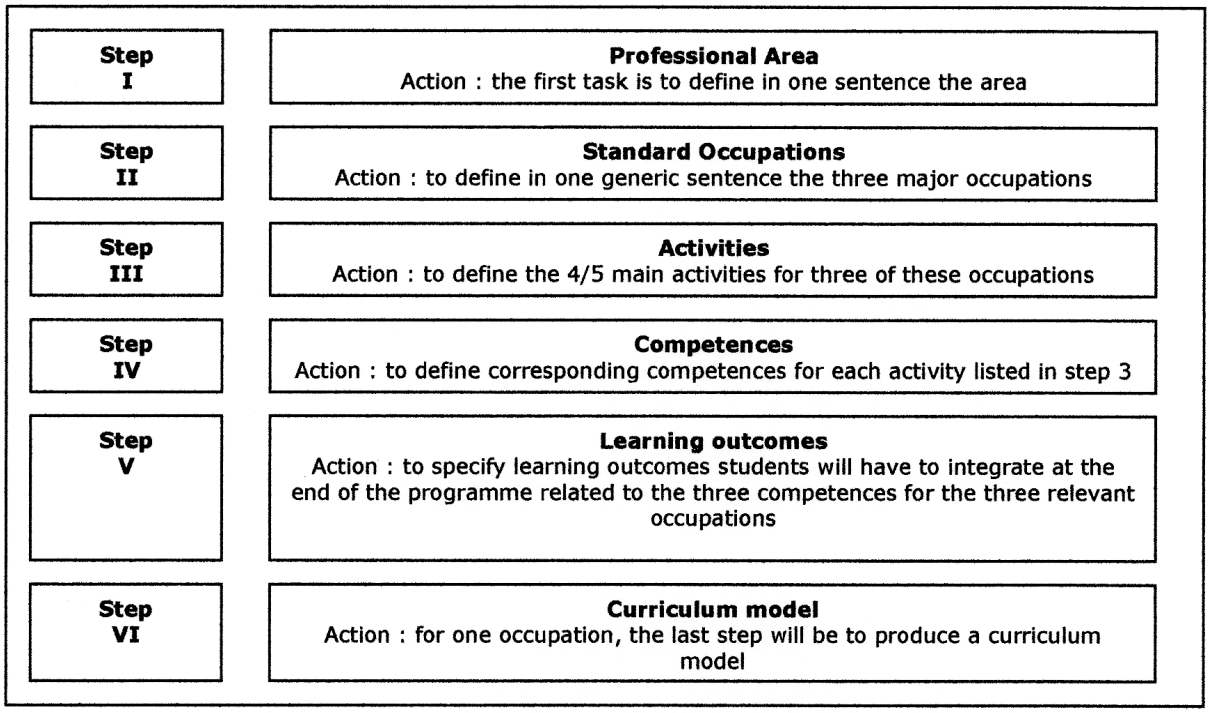

Figure 11
AEHESIS Five Processes Framework (A5PF)

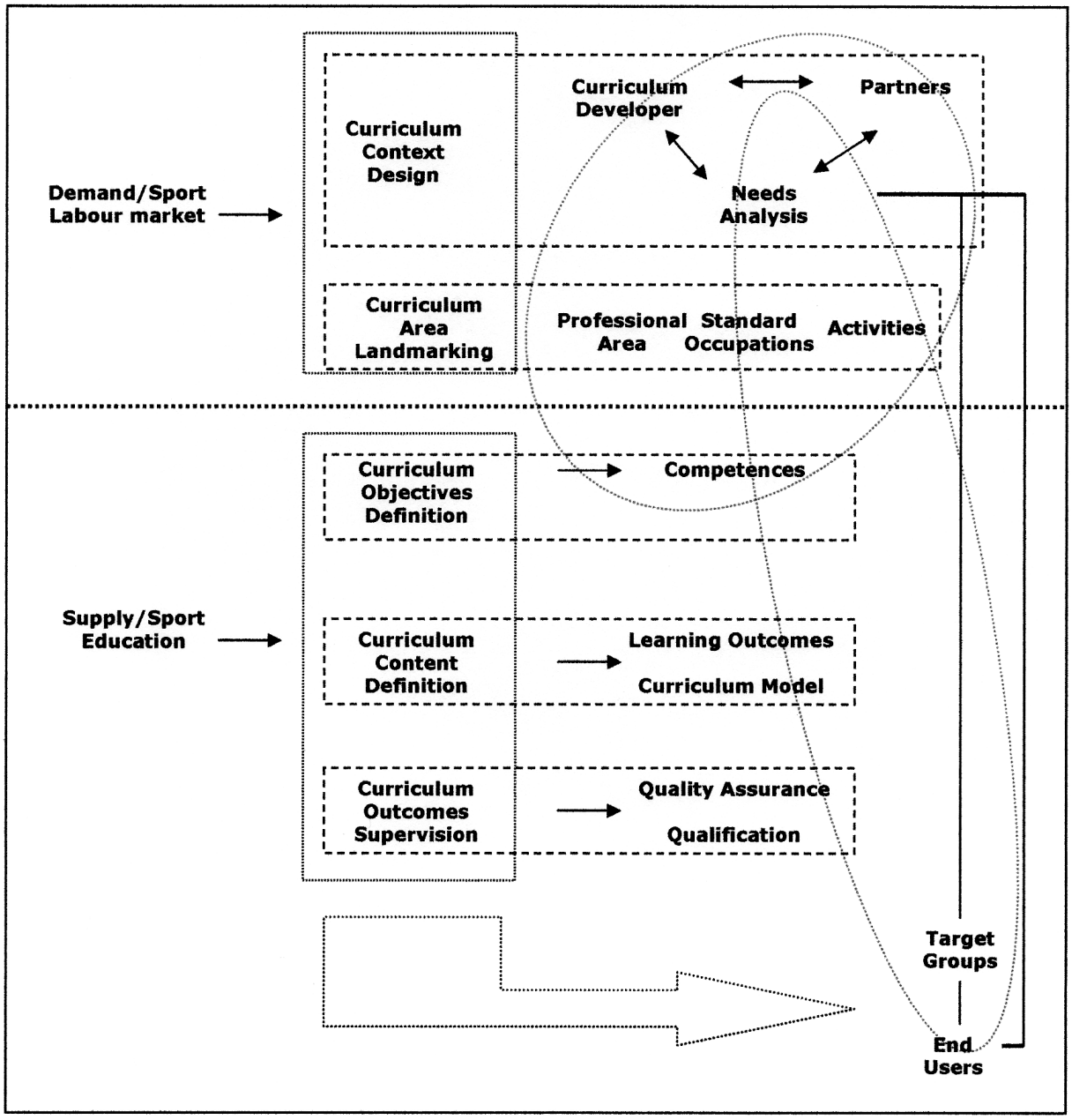

Figure 12
Suggested Classification of Coaching Roles

Role title	Role description
Apprentice Coach	Assist more qualified coaches delivering aspects of coaching sessions, normally under supervision. Deliver coaching sessions under direction/support. Acquire and practice basic coaching competencies.
Coach	Prepare for, deliver and review coaching sessions. Demonstrate basic coaching competence.
Senior Coach	Plan, implement and review annual coaching sessions. Demonstrate advanced coaching competence.
Master Coach	Plan, implement, analyse and revise multi-annual coaching programmes. Demonstrate advanced coaching competence, innovation and leadership.
Coach of participation-oriented sportspeople	
Coach of performance-oriented athletes	

Figure 13
Competence Framework for Coaching

Activities	Tasks	Competencies
The main activities performed by coaches are as follows:	Within each activity, coaches perform the following tasks:	The competencies needed to successfully perform the tasks related to each activity include:
• **Training**: to prepare sportspeople for competition by planning, organising, conducting and evaluating the appropriate programmes and sessions • **Competition**: to plan, organise, conduct and evaluate the appropriate events, tournaments, programmes and matches • **Management**: to lead, direct or control people related to the sport • **Education**: to teach, instruct or mentor people related to the sport	• **Plan**: ability to put together a step-by-step programme achieve a goal in a session, series of sessions, season, series of seasons • **Organise**: ability to co-ordinate and make all the necessary arrangements to ensure that the goal will be achieved in an efficient and effective way • **Conduct**: ability to carry out and execute the planned and organised task • **Evaluate**: ability to study, analyse and decide on the utility, value, significance or quality of the above process • Research and self-reflection	• **Knowledge**: the use of theory and concepts, as well as informal tacit knowledge gained experientially • **Skills**: the functions (know-how) a person should be able to perform when functioning in a given area of work, learning or social activity • **Personal, professional, ethical:** knowing how to conduct oneself in a specific situation; and possessing certain personal and professional values • **Generic/underpinning/key**: Communication in mother tongue, communication in another language, basic competencies in maths, science and technology, digital competence, learning to learn, interpersonal and civic competencies, entrepreneurship and cultural expression

Figure 14
PETE Program of Study and Outcomes

Programme of Study	
Fields of Study	
Practical Activities (Theory and Practice)	Outcomes
Dance Games Gymnastics Outdoor Adventure Activities Swimming Track & Field Athletics Other ('new' and national/local culturally traditional activities)	• Knowledge, understanding and analysis of (motor) skills and performance factors in a range of activities • Teach activities' skills/didactic competence combining theory and practice • Teach activities according to principles of horizontal and vertical articulation of the curriculum, respecting principles of inclusion and differentiation of teaching • Have a range of, and apply, practical skills
Educational & Teaching Sciences (Pedagogy/Didactics)	• Knowledge of how to justify the presence of PE in the core curriculum, as well as the importance of physical activity as a health factor knowing how sport contributes to human development • Knowledge of curriculum implementation • Knowledge of education and effective teaching theories • Knowledge of communication and learning processes
Natural and Biological Sciences (General and Applied)	• Knowledge of structure, function and control of physical systems • Understanding and application of biomechanical principles to movement • Knowledge of human anatomy • Knowledge of the processes of developing pupils´ health-related fitness
Social Sciences/Humanities (General and Applied)	• Knowledge of the school as a social institution and contextualisation of professional practices • Knowledge of PE/Sport in society, historical and sociological developments • Psychological/sociological knowledge of human movement • Understanding of the concept of culture and application to PE and sport
Scientific Work (PE-related research study: dissertation or project)	• Preparation and conduct of PE project • Ability to generate quantitative/qualitative data • Present written report
School-based Teaching Practice	• Application of teaching skills • Experience content, pedagogical and contextual knowledge • Assessment and evaluation of teaching skills