

Social Science and Kinesiology

Third Edition

Glyn C. Roberts
Susan L. Greendorfer

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and

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Scholarship Reconceptualized: The Connectedness of Kinesiology

John M. Charles

The twin premises of this paper were clearly articulated by Ernest Boyer in Scholarship Reconsidered (1990). Boyer asserted that the "connectedness" of scholarship is the quality that makes it "authentic" (p. 19). Furthermore, he suggested that it is the responsibility of the university to "help students better understand the interdependent nature of our world" (p. 77). The implementation of these principles in kinesiology entails a reconceptualization of curriculum structure, scholarship, and professional preparation. At one level this paper is an examination of how the curriculum and scholarship might be structured to promote connectedness within the university. The other purpose of this paper is to extrapolate the nature of the interdependence of kinesiology and society through an analysis of the professional challenges that await our graduates beyond the walls of the academy.

Kinesiology can help in higher education's quest "to build bridges across the disciplines, and connect the campus to the larger world" (Boyer, 1990, p. 77). Its focus on human movement and humans moving spans the disciplines of the arts and sciences. Its scholarship reaches beyond the level of discovery through investigative research to incorporate scholarship through integration, appli-

cation, and teaching. Despite these strengths, it would be unrealistic of us to expect this relatively new field to become more firmly embedded in the infrastructure of higher education without our first having clearly conceptualized *how* kinesiology can build bridges across disciplines and connect the campus to the larger world. This process of conceptualization is much more than self-evaluation, it is a highly charged political process within the academy.

Higher education is in a state of flux. Universities are reexamining their priorities, reviewing their programs, and, in many cases, downsizing. Echoing a popular theme today, Edginton, Davis, and Hensley (1994) described some of the trends in higher education, with a special focus on those in kinesiology, suggesting that "in education, as in business, we need to continue to experiment by blending existing and new areas of knowledge and reconceptualized professional fields" (p. 55). This process of reconceptualization is premised upon recognition of the symbiotic nature of kinesiology and society's changing needs. Identifying these changes and then capitalizing upon them as an opportunity for growth is a communal challenge for all of us in the human movement professions. If we hide our heads in the sand when faced with this tide of change, we might surface to find that the wave of opportunity has passed us by. If, on the other hand, we recognize and capitalize on indicators of cultural change that point toward a future society that places a premium upon health and well-being and that values personal fulfillment through physical activity, we may be richly rewarded. To reap these rewards, kinesiology must first recognize the opportunity, then position itself to maximize its gain. Before it can be a lead singer, kinesiology must be accepted as a member of the chorus. Our subject field should not be discordant with the mission of the university, nor should it be dissonant with trends in society.

Connectedness: The College

At the outset of the Carnegie Foundation Report, Boyer pondered whether America's colleges can be of greater service to the nation and the world. He wondered if they can respond more adequately to the urgent new realities both within the academy and beyond. In some ways, kinesiology is particularly well-positioned among its fellow disci-

plines in the university to respond to this imperative. As an evolving field of study it is not entrenched behind conservative walls of tradition that might retard change. Furthermore, its central focus of study, human movement, has unambiguous relevance in today's society, which is an advantage over many college concentrations (classical studies comes to mind). Yet, although the opportunity to be a leader in this movement is apparent, it is less obvious which strategy kinesiology should pursue in developing forms of scholarship that are responsive to, and reflective of, the larger constituencies that surround it, namely the university and the society in which higher education is located.

The scholarship of *discovery* must contribute in ways that are deemed meaningful in higher education. In other words, the problems to be studied, the methods of research, and the quality of scholarship in kinesiology must be high on the hierarchical scheme of priorities established by the university. Furthermore, kinesiology can potentially be a major contributor in other ways to the scholarly mission of the academy. One of the strengths of kinesiology is its propensity for *integrative* scholarship. Its central focus, humans moving, is ubiquitous. Methods of scholarship employed to study it are many and varied. In the process of constructing and refining a curriculum to study human movement, kinesiology can make connections across the disciplines. When scholars in kinesiology eschew insulated boundaries that tend to define subspecialties in the field and give isolated facts meaning by putting them into the perspective of the larger picture, then kinesiology can live comfortably in overlapping academic provinces. Kinesiology is relevant and central to the university's mission, not only to the extent that it contributes in meaningful ways to the body of knowledge espoused by the college, but also insofar as it makes connections across the disciplines and creates a sense of connectedness within the institution. The paradigm presented in this paper is one way of envisioning kinesiology that has as its central premise the connectedness of knowledge: the integration of the study of human movement into the university curriculum through a synthesis of ideas and approaches.

Kinesiology can seem relevant and central to the university's mission of generating scholarship

that has application to consequential problems in society. A strength of kinesiology is its obvious relevance to critical issues that must be addressed in the 21st century. It is positioned to gravitate from the periphery of academic relevance to assure a position of centrality in a new order of higher education that is judged not by its intrinsic worth, but more importantly, in terms of its service to the nation and the world. Kinesiology is addressing challenges today that show no signs of diminishing in their magnitude as we approach the next century.

Connectedness: Liberal Education

Although different institutional missions promote differing approaches to scholarship, there are common denominators that underlie both the mission and the scholarship of all programs dedicated to the study of human movement in higher education. Regardless of the name of the department (kinesiology, exercise science, physical education, etc.), the academic unit in which it is housed (liberal arts, education, etc.), or the unique nature of a particular university, kinesiology departments share a common focus in human movement and a communal interest in survival. Survival, though it may seem a very minimalist goal, is not assured in times of shrinking budgets and curriculum revisioning, that is unless a program is seen to contribute in meaningful ways to the university's academic agenda. The complexity of modern times is generating change in the curriculum and more emphasis on learning how to learn, how to think critically, and how to be successful in the information era. It is placing a premium upon understanding phenomena from multiple perspectives, on cross-disciplinary studies, and on term teaching. In short, it is an academic milieu in which a liberal education is increasingly viable.

Boyer emphasized that too great a distinction should not be made "between careerism and the liberal arts" (p. 77). He endorsed the inclusion of the key features of the liberal arts in even the most technical and vocational of curricula. By implication it seems appropriate to seriously consider this approach in kinesiology in every type of institution of higher learning, whether it be a research university, a doctorate-granting university, a community college, a comprehensive college, or, of

course, a liberal arts college. Boyer was a proponent of this position: "Simply stated, tomorrow's scholars must be liberally educated. They must think creatively, communicate effectively and have the capacity and the inclination to place ideas in a larger context" (p. 65). Shifting toward paradigms of learning that encompass the premises of a liberal arts approach entails "countering the fragmentation that keeps us from understanding the articulated whole" (Rintala, 1991, p. 275) by approaching human movement and humans moving from a range of connected and overlapping perspectives. The "kinesiology umbrella" depicts the interrelatedness of the knowledge bases and

may be examined through motivation theory, and the physics of motion may be studied through biomechanics. The movement experience itself serves to connect intellectual approaches that are often alien to each other on the university campus. Using the same examples of philosophy, psychology, and physics, an activity such as white-water canoeing can bridge the humanities, social sciences, and natural sciences into one enjoyable laboratory experience by combining aesthetic reflection, behavioral analysis (risk taking, anxiety, etc.), and the biomechanical principles underlying paddling and taming the elemental forces of the river. Few other disciplines offer such connect-

edness, such a convergence of theory and practice, with applications that range from physical activities to education and health care. Boyer endorsed such a program, one that is encompassing, that makes connections, and that will have utility in tomorrow's world. He suggested that it should incorporate not only breadth of vision—for "even as the categories of human knowledge have become more and more discreet, the need for interdisciplinary insight has increased" (1990, p. 68)—but also connectedness with the culture because "now is the time, we conclude, to build bridges across the disciplines, and connect the campus to the larger world" (p. 77).

The usefulness of kinesiology in remedying the future ills of society is a product of its breadth of focus. As the "definitional double diamond" diagram illustrates (see Figure 2), it covers the broad realms of all forms of human movement and the full range of scholarship described by Boyer. Descriptive study is primarily investigative discovery using the range of empirical techniques employed in the subdisciplines that comprise kinesiology. Prescriptive study of human movement and humans moving is a combination of integrative, applied, and teaching scholarship.

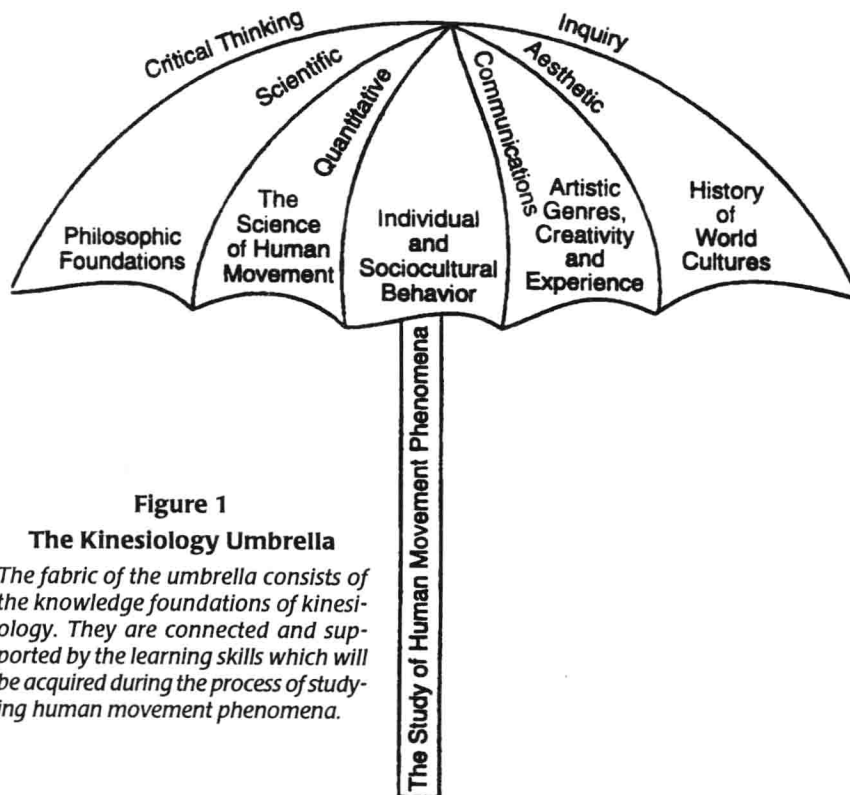


Figure 1

The Kinesiology Umbrella

The fabric of the umbrella consists of the knowledge foundations of kinesiology. They are connected and supported by the learning skills which will be acquired during the process of studying human movement phenomena.

learning skills that comprise the study of human movement phenomena (see Figure 1).

The strength of this liberal arts approach to the study of human movement is that it is comprehensive. Students are exposed to multiple ways of learning and of knowing as they encounter humanities, social sciences, and life sciences, all in the framework of kinesiology. For example, the philosophy of being may be explored through the mind/body relationship, the psychology of trying

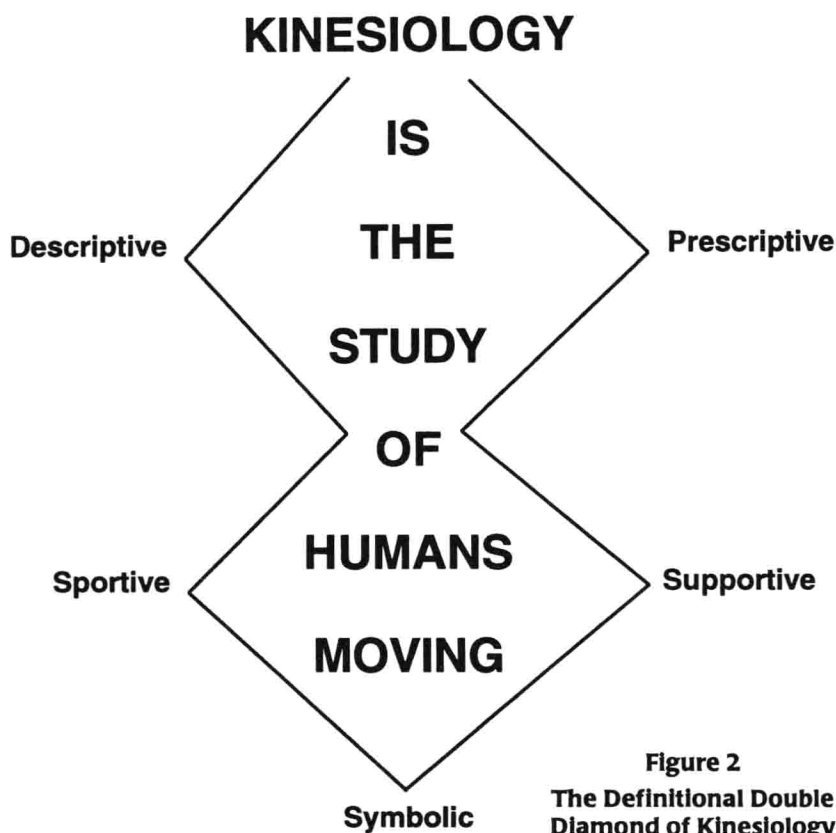


Figure 2
The Definitional Double Diamond of Kinesiology

The lower diamond illustrates the breadth of focus that makes kinesiology so widely applicable to a social agenda. This model subdivides human movement into sportive, symbolic, and supportive categories. The value of this paradigm is that it allows consideration of discrete movement categories; the shortcoming is that it fails to represent the blurring of their boundaries.

The theoretical study and professional practice of human movement may overlap from one form of movement to the other as in the case of sports medicine, which straddles sportive and supportive domains. *Sportive movement* is skill-related athletic activity involving varying levels of vigor, fine and gross motor skills, and people of all ages and abilities. *Symbolic movement* is physical activity that expresses thoughts and feelings through the symbolic medium of the body. Physical expressivity, which reached its zenith in the writings of Eleanor Metheny, has yet to establish itself fully as an aspect of human movement studies. The realm of *supportive movement* is the current growth

area of kinesiology. The emphasis on health-related physical activity of a functional nature is leading kinesiology graduates into a range of human movement professions that offer the general public the kind of service that fosters greater efficiency and well-being in daily physical processes.

The scholarship of kinesiology focuses in various ways on these three types of movement. Different modes of inquiry that incorporate both the research of discovery and the connections of knowledge made through integrative analysis can, and should, be applied to society's pressing needs. Today, social needs challenge kinesiology to help create productive education systems, an effective health program, a sound sports climate, and a physically literate citizenry. These

challenges connect kinesiology to its larger cultural environment, but connections to the core concerns of our culture are necessarily fragile and fleeting. Kinesiology has arrived at a point in time at which it can clearly serve society if it will recognize and grasp these challenges while they are still "pressing needs" and before other agencies claim them as their territory.

Connectedness: The Culture

Tomorrow's World: Today's Challenges

As valuable as a liberal arts study of human movement may be intrinsically as a form of education, its ultimate value will tend to be determined using extrinsic criteria. Does it have utility? Will it lead to a rewarding career? Does it help with the pressing issues of our time?

The interface between scholarship and the needs of society is crucial to the continuing vitality of the academic enterprise. In this respect, the stock of kinesiology is rising. Although imperatives

such as education and health care seem to be treated by the nation's leaders as political pinballs, they are likely to continue to be political priorities into the 21st century. The professions that kinesiology graduates are prepared for are experiencing a growth spurt. The intellectual neutrality of this preparation, which provides basic understanding of human movement without linking it explicitly to any one career field (to the detriment of all others), creates great professional portability.

Challenge 1: To Enhance Education

As Boyer has suggested, "Clearly higher education and the rest of society have never been more interdependent than they are today" (1990, p. 76). He proceeded to identify two areas of concern in which kinesiology can help to effect change: "The nation's schools and its health care delivery system cry out for the application of knowledge that faculty can provide" (p. 76).

Teaching in the nation's schools is a fundamental focus of kinesiology. The publication of *A Nation at Risk* (National Commission on Excellence in Education, 1983) precipitated an avalanche of reform agendas designed to enhance teacher preparation and the quality of the learning experience in the schools (such as the Holmes Group report, 1990). Subsequently, steps have been taken to make school physical education classes more meaningful and relevant to students by emphasizing such features as fitness testing, wellness, lifetime skills, and outdoor adventure education (Humberstone, 1995). In conjunction with this expansion in the curriculum, teacher education has evolved from an emphasis on technical skill dissemination to an incorporation of decision making and reflective teaching (Tsangaridou & Siedentop, 1995).

At a time when the physical fitness of the nation's youth is waning and obesity is waxing, the need for quality physical education in schools is apparent. However, education is by no means confined to the school setting or top people of school age. There is a marketplace in the symbolic domain for kinesiology graduates who would teach others how to express themselves clearly and how to move expressively. People of all ages and abilities within and beyond the walls of educational institutions are interested in being taught sport-related skills. Similarly, experts who can teach sup-

portive movement skills that will provide health enhancement and well being have a role to play in our health-conscious culture, starting in the nation's schools. "Promotion of lifetime fitness and wellness attitudes will become the main thrust for basic instruction" (Massengale, 1987, p. 12).

Challenge 2: To Promote Health and Healing

Kinesiology directly addresses the other item on the social agenda that Boyer identified: the nation's health care delivery system.

Supportive movement is gaining public acceptance as a critical feature of health and healing in America today, primarily as a means of preventing disease, as a modality of healing, as a method of promoting workplace efficiency, and as a medium to gain environmental health.

The costs of health care are growing, yet its scope is dwindling. Fewer people can afford the luxury of all-inclusive health insurance; many citizens can expect minimal medical treatment. In this climate, health care has rapidly ascended the social agenda of pressing needs and has become a political priority. Health reform is challenging our medical system to deliver high-quality, cost-effective care. One of the best remedies for the high cost of treatment is avoidance through prevention: "emphasis will move from technology-intensive intervention to preventive measures. As costs continue to rise preventive medicine will take hold as a more cost-efficient alternative" (Cooley, 1993, pp. 57-58). Prevention works; it is estimated that better diet, exercise, and new emphasis on prevention will extend the lifespan of this generation by 5 years over its immediate precursor (Blair et al., 1989; Katz et al., 1983; Powell, Caspersen, Koplan, & Ford, 1989), and prevention is the realm of kinesiology. Prevention has reached its zenith in the culture of kinesiology in the form of *wellness*. The conceptual framework underlying wellness addresses all forms of prevention, including medical screening and health-risk appraisal, psychological well-being and stress management, behavioral adjustment relating to substance abuse, nutritional counselling and weight control, personal health, hygiene and safety, socialization techniques to reduce alienation and loneliness, occupational and environmental health awareness, and a focus on spiritual health. As prevention is becoming a buzzword of a society seeking to enhance

personal health and to contain the costs of health care, this emphasis in kinesiology is both timely and marketable.

Supportive movement is not only a factor in prevention through wellness, but is also an increasingly accepted modality in healing. Medical ideology and practice is changing to open a window of opportunity for kinesiology graduates. The 20th-century emphasis on treatment of symptoms through surgery and the prescription drugs is being challenged by a conception of medicine that looks beyond the system to treat the cause. This movement has been spurred by growing acceptance of the psychosomatic nature of disease and treatment, and recognition of the impact of lifestyle factors as cause and cure of many ailments. As this alternative paradigm of health and healing makes incursions into the traditional approaches of the medical establishment, more and more people are turning to unconventional therapies such as acupuncture, chiropractic, homeopathic, and herbal medicine (Carter, 1995; Wardwell, 1994). Clearly, kinesiology has a role to play in enhancing well-being through prevention and through using movement as a modality in traditional and alternative medical settings for those needing treatment for disease. The role of kinesiology extends across the boundary of sickness toward total well-being, to encompass enhancing the well-being of the healthy through physical processes. Vertinsky (1991) predicted a continually growing number of clients for a service that brings about a sense of personal unity and enlightenment for health seekers seeking exercise programs and holistic health practices, altered perceptions, cosmic affirmation, "unity with nature," and the "integration of mind, body and spirit for the attainment of whole health" (p. 82).

The emphasis on health-related supportive movement has ramifications beyond the realms of healing and wellness. It reaches into the workplace and beyond to encompass our relationship with our environment: "Health will be measured in a new way, including environment, quality of life, employment, and other activity at work" (Coates, 1994, p. 2). In the fast-paced work world in which every minute counts, physical efficiency is an important consideration. Kinesiology professionals can help to enhance the health of the work environment through two strategies: (a) by

implementing corporate fitness programs designed to reduce absenteeism, enhance employee health, increase enthusiasm for the job and loyalty to the company and (b) by ergonomic analysis and human factors research.

Because it studies the biomechanics of physical efficiency; the physiological capabilities, needs, and limitations of the human body; and the psychosocial dimensions of work such as motivation and group dynamics, kinesiology is a natural precursor to ergonomic analysis. The health of the work environment is part of a bigger picture of environmental awareness of ecological health, encompassing both the natural and the social surroundings of an individual. This society is becoming increasingly concerned, if not alarmed, at the degeneration of the physical environment. Ranging from leisure studies and recreation to environmental physiology, kinesiology has the scope to study environmental problems and to serve society by helping to rectify them.

In a nation of cultural disparity, challenged to serve all peoples faithfully while balancing the national budget, the social environment of disadvantaged classes is a problem of growing proportions. Wellness, with its emphasis on prevention, has tended to bypass those people surviving on the fringes of capitalism. It has developed an elitist flavor, catering primarily to those who are able to exercise right, eat well, and profit from the services offered by wellness professionals. Vertinsky (1991) summarized this critique as follows:

Pundits increasingly underline the downside of a health-promotion philosophy built upon personal responsibility for health, claiming that the lifestyle approach has ignored the more difficult, but equally important, problem of the social environment, which both creates some lifestyles and inhibits the maintenance of others. (p. 80)

In the process of enumerating the nation's health care objectives the U.S. Office of Disease Prevention and Health Promotion (1991) emphasized the importance of redefining health care to incorporate a new, alternative, comprehensive socioecological paradigm of health. Kinesiology, broadly based in the arts and sciences, is providing leadership in this national mandate. Lawson (1992) summarized this new thrust in wellness as follows:

health promotion is the art and science of helping persons maintain or change their emotional, social, intellectual, spiritual, and physical characteristics; and, if necessary, changing social institutions and physical environments to bring them into greater harmony with ideals for healthy individuals and a healthy society. (p. 112)

Challenge 3: To Refine (Redefine?) Sport

Any phenomenon as ubiquitous as modern sport, which affects so many people in so many ways, qualifies as a pressing need for academic study and professional intervention. Boyer recommended that America's colleges respond more adequately to the urgent new realities both within the academy and beyond. Kinesiology scholarship, in its emphasis on sportive movement, is responding to the urgent new reality of sport in society. To be at the forefront of change, the study of sportive movement must recognize cutting-edge changes taking place in the configuration of modern sport. Such recent trends in sport as the growing emphases on egalitarianism and humanism, performance technology, ethics and reform, and increasing commodification suggest directions and applications of scholarship in kinesiology.

Social and legal activism are causing the playing field to level. Gender equity, minority recruitment, and opportunities for special populations are examples of the issues gradually steering sport toward a more egalitarian future as envisioned by Sage (1990) when he said

The values of a decent progressive sport system will center on equality. . . . This egalitarian sport system will provide adequate facilities and equipment for everyone, regardless of means. . . . In a society committed to egalitarianism, active participation is encouraged and adequate resources are universally available. . . . Arbitrary distinctions of sex, race, and age will cease to function as forms of oppression or criteria for limiting sport opportunities. (pp. 216–217)

In tandem with the contemporary emphasis on egalitarianism, a thrust toward empowerment and self-determination through physical activity is apparent. One of the legacies of the 60s is an emphasis on individualism, cooperation, and environmental awareness that has translated in the realm of physical activity into a growth in interest

in "alternative" forms of endeavor such as outdoor adventure activities, eastern martial arts, and "extreme" games.

Meanwhile, in mainstream sport, the following trends are apparent: an emphasis on performance perfection through means both fair and foul, a move to curb foul means through education and enforcement, and omnipresent concern with the profit margin central to the commodification of sport. Technology has enhanced performance along a variety of significant dimensions, including safety, comfort, and equipment evolution. Sport not only provides a natural venue for technological experimentation that will enhance performance through legitimate means, but also provides opportunity for the unscrupulous uses of science that can lead to spectacular results and significant rewards, such as ergogenic aids. Performance-enhancement is only one aspect of the business of sport that will continue to pay high dividends into the foreseeable future.

The ownership, agency and management, performance and coaching, and the secondary marketplace of sport (including the sporting goods industry; the mass media; the advertising industry; and such sport-related concerns as promoters, the travel business, hotels, and restaurants at host sites) all have vested interests in the continuing growth and success of sport. The emphasis on performance-enhancement and on running sport as a business venture inevitably leads to occasional ethical abuses that place an onus on the sports establishment regulatory agencies (such as the NCAA) and the law courts to curb abuses and impose ethical standards on participants. Through sports studies, kinesiology scholarship can inform its students of these trends and can prepare them to become leaders in professions evolving around sport's growth.

Challenge 4: To Develop Physical Literacy

Edginton, Davis, and Hensley urged kinesiology faculty to "be proactive in responding to changes that are emerging in the information era" (1994, p. 55). A central feature of the information era is communication enhancement. The human body is a primary means of nonverbal communication. Physical literacy, which is premised upon an understanding of the symbolic meanings of human movement, may be manifested through perfor-

mance, rehabilitation, or self-expression. These expressive or symbolic functions of movement are of increasing interest to American society. As Moore and Yamamoto observed in *Beyond Words* (1988), "In addition to the burgeoning interest in the functional aspects of body movement, there is a renewed concern for its expressive properties" (p. 295).

One indication of this trend is in the arena of performance. Dance companies are proliferating, dance is an increasingly popular pastime, and expressive "artistic" sports such as gymnastics and ice-skating are on the rise. A second aspect of the growing interest in expressive movement relates to the developmental and rehabilitative qualities of symbolic movement. The developmental qualities of dance and other forms of creative movement are awakening increasing recognition within formal education and are experiencing a resurgence in the nation's schools. In addition, symbolic movement is a viable, increasingly utilized mode of therapy. The rehabilitative, regenerative power of self-expression through movement is increasingly being channelled through such modalities as play and dance therapies to the treatment of a range of psychological and emotional disorders. Finally, human movement has a uniquely powerful communicative capacity. Leather (1986) maintained that nonverbal factors are the major determinants of meaning in the interpersonal context. Faculty in the field must be proactive in grasping this opportunity for expanding scholarship. Kinesiology has only begun to study and interpret body language but may eventually contribute to the physical literacy of the nation through education programs and marketable products such as software packages.

Connectedness: Scholarship

To remain viable in the rapidly evolving culture of the 21st century, kinesiology must discover and adopt paradigms of scholarship that illuminate human movement in optimal ways. Because of its dynamic, person-centered nature, movement is less likely to be understood through methods of inquiry that are themselves narrow and static than by multidisciplinary approaches that are better able to examine the complexities of movement phenomena from multiple perspectives. Kinesiology scholarship has traditionally stayed within the confined boundaries of the subdisciplines. For ex-

ample, as exercise physiologists have pursued their research agenda using the well-defined criteria and methodologies of exercise physiology, sports psychologists have proceeded with their investigations according to the established procedures and protocol of psychology. Research findings have been informative, and their applications have been beneficial, but the process has been disintegrated. A challenge to kinesiology as it enters the 21st century is to develop scholarship that is integrative; that incorporates the interconnectedness of the humanities, social sciences, and life sciences into the study of human movement; and that incorporates the experiencing of physical activity into a meaningful program of study.

This trend toward inclusiveness, toward examining the intersections of overlapping disciplinary perspectives, and toward establishing new meanings where old boundaries used to exist, transcends kinesiology. It is a theme repeated by governing organizations of the arts and sciences such as the American Association for the Advancement of Science (1990), which recommends a "move away from excessive fragmentation toward an involvement with the world around, with its emphasis on interdisciplinary research endeavors and interest in problems involving the mutual impact of science and society" (p. 93). The rationale for this recommendation can be found in the recognition that both the world we live in and the methods of inquiry used to understand it are changing:

A shift has taken place toward framing questions that deal with larger issues. . . . Increasing emphasis is being placed in truly interdisciplinary symposia in which science is advanced through the illumination of key topics that will not bend to the attack of a single discipline. Individuals from widely diverse fields—including architecture, law, religion, art, and the humanities—are often essential participants in this difficult and demanding task. (American Association for the Advancement of Science, 1990, p. 93)

Leaders in the field of kinesiology have adopted a similar theme adapted to the needs and opportunities of the study of human movement. Wells and Gilman (1991) have observed a shift in financial opportunities; "piecemeal efforts to study human performance no longer attract major funding. Innovative, conceptual approaches that inte-

grate other disciplines and that have wide relevance to various areas of human endeavor are required" (p. 15). They proceed to outline an ecological model for the study of training for performance that "emphasizes the holistic interrelationships between an individual and the biological-psychological-sociological variables that make up that individual's ecosystem" (p. 16). A similar emphasis on the sociocultural factors that influence an individual's movement behavior is expressed by Malina (1991) in his call for a "biocultural approach" (p. 30).

Even as exercise scientists seek to bridge the chasm between the arts and sciences, pioneers from the social sciences are embarking upon a similar journey. From the subdiscipline of motor learning, Christina (1987) observed that "in the future we should use an interdisciplinary approach and incorporate ideas and methods from biomechanics and a number of other fields, which collectively may be referred to as cognitive science" (p. 31). In reciprocal fashion, biomechanists have recently endorsed a multidisciplinary approach (Cavanagh, 1987; Frederick, 1985; Komi, 1984; Zernicke, 1983). Ecological and synergistic biomechanics are emerging as links with such fields as neuromuscular physiology, psychology, and the arts. Even the arts that have typically been sparingly included in kinesiology programs to provide depth, color, and texture to the appreciation of physical activity are drawing from beyond the realm of the humanities to develop "broader communities of scholars" that "will discover in the performance approach an answer to that most important intellectual challenge of the next decades: the opening of new lines of contact between the humanities and social sciences" (MacAloon, 1984, p. 5).

In conclusion, it is apparent that these are both the worst and the best of times for kinesiology. The political and financial climate in higher education is hostile to programs perceived to be peripheral. No longer can an academic department expect to continue to exist merely because it has served a useful purpose in the past. Only when a concentration is meaningful in the context of the present academic agenda of the university and promises to continue to serve both the academy and society in the future can it expect to survive and flourish. Kinesiology is poised at the brink of both boundaries. It can perish if it attempts to

drive ahead, guided only by what it can see through its review mirror; or it can flourish if it heeds the vision of the future extolled by Boyer that directs the multidisciplinary scholarship of a liberal education toward a multiplicity of societal needs:

Even the best of our institutions must continuously evolve. And to sustain the vitality of higher education in our time, a new vision of scholarship is required, one dedicated not only to the renewal of the academy, but ultimately, to the renewal of society itself. (p. 81)

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