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The response of physical education department leaders to organizational restructuring mandated by Taiwan higher education reform

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THE RESPONSE OF PHYSICAL EDUCATION DEPARTMENT

LEADERS TO ORGANIZATIONAL RESTRUCTURING

MANDATED BY TAIWAN HIGHER EDUCATION REFORM

By

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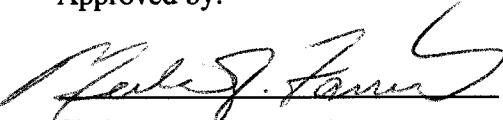
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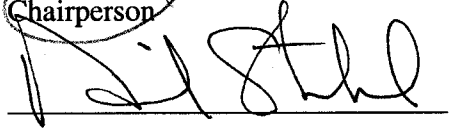
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Approved by:

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The Response of Physical Education Department Leaders to Organizational
Restructuring Mandated by Taiwan Higher Education Reform

Chairperson: Dr. Merle Farrier

Physical education, which plays a major role in determining the health and quality
of life for students, plays a critical role in institutions of higher education. In Taiwan,
Physical Education Departments have historically been a second-level administrative
department under the Department of Student Affairs in institutions of higher education.
Since 1994 higher education reform, most universities have moved the Physical
Educational Departments to a first administrative level. Physical Education
Departments face numerous challenges after the elevation of their administrative
status to level one. This change in status has required substantial organizational
improvements in order to fulfill the new goals for higher education. This research
investigated the current status of higher education institutions Taiwanese Physical
Education Departments in order to determine the degree of organizational
improvement resulting from higher education reform.

A survey was sent to 150 chairs of Physical Education Department in all public and
private non-religions higher education institutions in Taiwan. There were 112
completed surveys received providing an effective response rate of 75%.

The analyses of the data indicate that Physical Education Departments have
reached a high level of compliance with the mandates and goals of Taiwanese higher
educational reform. With few exceptions, the Physical Education Departments have
met the expectations of higher education reform and may be characterized as having
achieved approximately 98% of the goals directed to them by the MOE.

Based upon the responses of the department chairs, this research found very few
differences in organizational structure among Physical Education Departments were
found. Therefore, the invariant organization structure of Physical Education
Department nullified correlative analysis using demographic variables and/or
Knowledge Management as predictive variables.

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CHAPTER ONE

STATEMENT OF THE PROBLEM

Introduction

The 21st century represents a paradigm shift from an industrial based society to

a knowledge and information-based society (Drucker, 1998). Traditional concepts and

styles of corporate management are no longer suitable for the fast changing and

highly competitive business world. Companies must therefore find ways to improve in

order to achieve longevity. Education is a long-term process of producing generations

that are knowledgeable and capable of meeting the challenges of the future. Hung

(1998) has stated that having an effective national education system that produces

globally competitive individuals in the 21st century is more important than ever

before. He has further stated that an internationally competitive citizenry, however,

can only be achieved where outstanding institutions of higher education exist.

The University as an Organization

Organizational theorists define an organization as a social unit that "has been

explicitly established for the achievement of specific goals" (Silverman, 1970, p.8). A

university is a type of social unit that possesses a complex nature. Siegel and Carchidi

(1996) and Sporn (1996) have called universities "complex social organizations."

Universities are complex and multiple organizations because there are many

constituencies or stakeholders with diverse goals, often resulting in conflict (Ford,

1992). In addition to offering complexity and multiplicity, universities are also

information and learning organizations (Balderston, 1995). Management must

therefore strive to make this complex and multifaceted organization a productive

learning environment.

A school is an organization that fosters individuality and independence and

thus tends to be a loosely structured organization (Chang, 2002). Chang (2002) has

argued that these characteristics diminish a school's overall competitiveness. Chang's

(2002) research has shown these characteristics are not advantages; instead, they

reduce schools' ability to succeed at a time when, amid the trend towards

globalization, competition is no longer limited to the borders of a nation but has

become boundless. In order for a nation to be competitive, its citizens must be

educated in such a way that they can compete with countries from every corner of the

world. As such, a school must also devise up-to-date strategies to become more

efficient in teaching, research, and administration.

The management of a university generally involves administrative officers,

including a governing board, a president, and executive officers (Ford, 1992;

Hungate, 1964; McCoy, 1995). The managers are usually responsible for four major

functional areas: instruction, research, and public services; business and financial

management; student services; and institutional development (Ford, 1992).

Higher Education

The challenges facing higher education are not unique. Like other

organizations, colleges and universities face mounting pressures due to the increase in

competition, the rapid growth of globalization, the development of the Internet, and

the rise of the knowledge worker (Hung, 2003). Some universities have addressed

these forces by striving to achieve high ratings in research and teaching. Other

universities have turned to private-sector management strategies in their continuing

struggle to gain market advantages in the competition for limited resources and

students (Daniel, 1998). These institutions have heightened their interest in quality

issues, including quality management, as a means of improving efficiency.

The turn of the 21st century has seen the structure of Taiwanese society change

so rapidly that people can hardly keep track (Tai, 2003). The impact of economics,

recession, terrorism, membership in the World Trade Organization (WTO), and

changes in the Taiwanese national policy have prompted people's thoughts and core

values to change significantly in recent decades (Tai, 2003). These changes affect

every aspect of society, including education.

After joining the WTO, the education policy in Taiwan became more flexible

than it had been and students' choices of schools and opportunities to study also

increased. As a result, schools in Taiwan have had to provide a better learning

environment in order to attract students; otherwise they face the prospect of losing

students and funding to the competition.

Curriculum Goals for Colleges of Physical Education in Taiwan

According to the "Intermediate Plan for the Development of College Physical

Education" (Ministry of Education Taiwan, Nov. 17, 1999), there is an immediate

need for greater diversity in physical education in Taiwan. Based on this plan, college

physical education studies must be reoriented toward promoting and cultivating

students' lifelong participation in sports. Moreover, every college must provide a

diversified physical education curriculum that will satisfy students' varying sports-

related needs and interests. The goals of this plan are as follows: (a) to keep students'

physical and mental development in balance; (b) to improve students' knowledge of

physical education; (c) to increase students' sports skills; (d) to cultivate appropriate

student behavior; and (e) to help develop in students habits of participation in sports.

(Ministry of Education, 1999).

Another government organization the "National Council on Physical Fitness

and Sport" agreed with the Ministry of Education's intermediate plan for the

development of college physical education and its importance. This national council

in a "White Paper" (July, 1999) stated that physical education is one of the key

elements of national education, and the goals of college physical education should be

to improve students' health and maintain a proper balance in their physical and mental

development.

Physical Education Department

Physical education traditionally has been an integral part of higher education.

In Taiwan, the Physical Education Department is one of the most important

departments in institutions of higher education (Hung, 2003). The Physical Education

Department is responsible not only for lessons in physical activities, but also for the

administration and maintenance of all sporting facilities. The Physical Education

Department must compete with other departments for limited financial and technical

resources. Hung (2003) asserted that administration of physical education in higher

education institutions should include organizing courses in physical education,

holding competitions, competing for budgets, and managing and maintaining all

facilities and equipment. Members of the department including supervisors,

instructors, and administrators are required to learn and improve constantly so that the

department will be an efficient component of the university and will achieve its goals

(Hung, 1998).

Physical education, which plays a major role in determining the health and quality of life for students, plays a critical role in institutions of higher education (Hung, 2003). Regular physical activity provides numerous health benefits—from more physically fit bodies and lower blood pressure to greater spiritual well-being and better cognitive functioning (Leslie, 2000). Physical education programs encourage physical activity and behavior changes and are an important key to influencing the health and well-being of university students. To improve the fitness level of students, officials should rethink the design and delivery of physical education programs (Leslie, 2000). Allensworth and Kolbe (1987) have argued that a high-quality program of physical education must be a core requirement in all schools and a central component in a comprehensive school health program in order to provide an education that is based on a healthy life style.

The Problem

The Level of Change in Physical Education Departments

According to Article 11 of the Constitution of Taiwan (R.O.C.), universities have the autonomous right to internal organization. Since 1994, universities have had the right to decide whether the Physical Education Department should become an independent department (The Judicial Yuan, 1998). Consequently, most universities have moved the Physical Educational Departments to a first administrative level so

that the department can take on more responsibility and better manage the money

budgeted for its programs. Within the environment of education and administrative

policy changes, the new reforms have required the administrators of physical

education not only to continue to manage courses and facilities, but also to make the

changes in the physical education curriculum that better meet the needs of students'

receiving a more comprehensive education (Ministry of Education, 1994). Physical

Education Departments of higher education institutions in Taiwan must implement

strategies for improvement and innovative organizational development, in order to

lead such organizations into the future (Hung, 2003). Leaders must take charge, make

things happen, envision dreams and then translate them into reality (Nanus, 1992).

In Taiwan, the Physical Education Department historically has been a second-

level administrative department under the Department of Student Affairs in

institutions of higher education. The purpose of the Physical Education Department is

to offer physical education courses and activities. The University Law has led

universities to make the Physical Education Department independent from the

Department of Student Affairs and move it to the first administrative level (See Figure

1) (Ministry of Education, 1994).

Figure 1.

Traditional administrative level of the Department of Physical Education in Taiwanese institutions of higher education. (Resource: Hung, 2003)
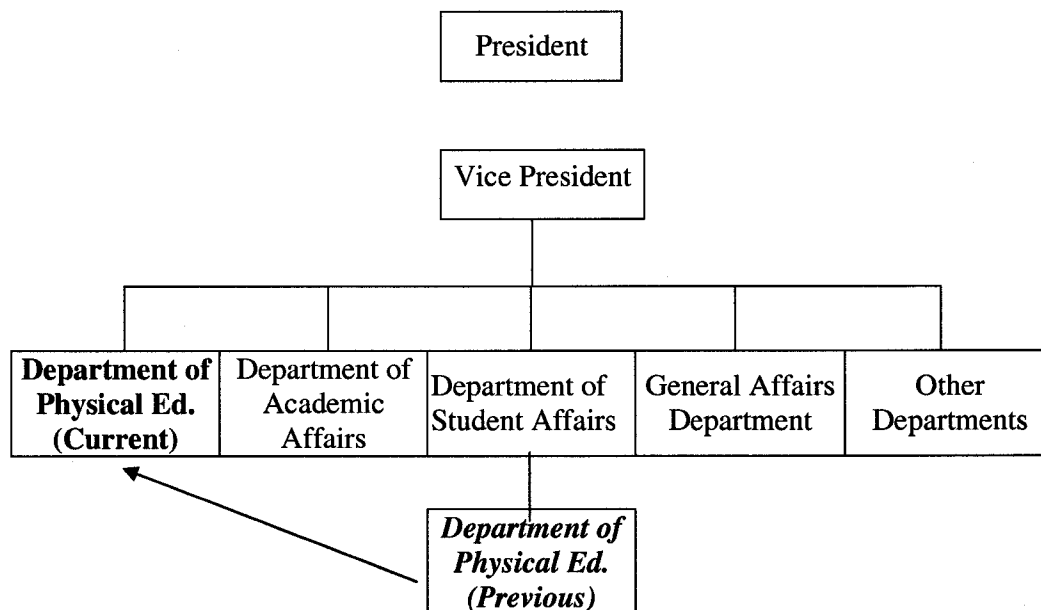
The University Law in Taiwan states that "in order to facilitate the integrity of university organizations and help fulfill the purposes of college education, the laws may provide for the main structure of a university's internal organization" (Ministry of Education, 1994, 2002). Since the educational reforms of 1994, University Law has given universities more freedom in the areas of academics, and teaching allowing them to create their own climate and culture (Ministry of Education, 1994). As a result of the passage of the University Law, Physical Education Departments are increasingly expected to integrate the resources of universities with their departments which will increase their efficiency and effectiveness in the future.

Curriculum Change

In 1994, with the issuance of *Detailed Rules and Regulations of the University Executive Code, 1994,* colleges and universities were given greater autonomy in establishing requirements for their programs. The Ministry of Education embraced the concept of self-rule as the operational policy that would govern the curriculum of colleges and universities. This meant that each college and university, public or private, could with the authorization of the Ministry of Education begin to add degree programs to their curricula and rewrite the requirements for their students in virtually all areas (Ministry of Education, 1994). The purpose of the New University Code was to provide greater academic freedom, stimulate research, ensure that universities have decision-making power, and adjust the balance between the Ministry of Education (MOE) and the universities' autonomy (University Code, 1994).

Quality of Teaching

In Taiwan, many physical educators focus their attention primarily on competitive sports; hence, there are very few professors interested in the physical education curriculum (Huang, 1999). After the new university code was issued in 1994, the courses required in physical education changed, students changed, and the teaching situation changed. Huang (1999) purported that physical educators must

change their curriculum and teaching quality to adapt to these university law changes

(Huang, 1999).

In the past, the Taiwanese government required institutions of higher

education to maintain the curriculum for Physical education. However, at the 1995

National Meeting of University and College Presidents, most presidents agreed to

change physical education from a curriculum of four-year required courses to a

curriculum of either elective or required courses, allowing each institution to decide

which option was most suited to their institution. As a result of this national change

for physical education classes in colleges and universities, physical education teachers

were forced to consider which kinds of classes students preferred. Teacher also had to

improve their teaching skills and professional knowledge (White Paper of National

Council on Physical Fitness and Sports, 1999).

Effective Management and Service

According to Liaw (1997b), a few factors determined the effective operating

and managing of sports areas and facilities. The following is Liaw's (1997b) detailed

explanation of each of the factors of effective management:

1. *Planning and service.* In addition to offering physical education courses, the use

    of sports facilities is a high priority for administrators. The director of the Physical

Education Department needs to consider and plan how sports facilities can best

serve the needs of users and the community.

2. *Management systems.* Schools are encouraged to establish a committee for the

management of sports facilities. Under the auspices of the committee, for instance,

the Physical Education Department would set up a new management system and

determine clear rules and fee scales for different types of facility use.

3. *Sports marketing.* Sports marketing refers to schools efforts to gain increased

financial benefits by providing more revenue-producing services and resources to

the community.

4. *Resource development and implementation.* Physical Education Departments need

to develop ways to better use their resources if they are to survive in a changing

environment. Directors of Physical Education Departments must have clear

strategies and goals for sports facilities. For instance, they must set up marketing

teams and effectively use surplus revenues from sports facilities for athletic

scholarships and employee-achievement rewards. These departments are also

encouraged to hire professional managers to oversee additional uses of sports

facilities.

Leadership Needed from Directors of Departments of Physical Education

With the amendments in the New University Code, physical education became an elective course. The response to the new University Law by the chairs of the Physical Education Departments was mostly positive except for the stipulation that the physical education courses were now becoming elective courses in the curriculum and there was no requirement for four years of participation. Regardless of the extensively documented advantages of exercise, physical activities, fitness, and physical education programs, chairs of Physical Education Departments were forced to comply with this mandate. At the present time there is no consistent required program of courses that a physical education major must take in order to achieve this degree. College and universities have very diverse and mixed requirements, which the new flexibility of the University Law encouraged (1994).

Presidents of universities and colleges, who began to view this area of the curriculum as expensive, often directed their instructional staff to reduce costs. Many institutions offered no academic credit for physical education classes even as they encouraged students to invest time and money to meet this requirement. Administrators pressured the chairs of Physical Education Departments to modify their programs (Hung, 2003). Chairs were in an awkward position, finding themselves

with their hands tied by budget cuts, which hindered their efforts to improve course

content, teaching quality and organizational efficiency (Hung, 2003).

The Director of Physical Education (Chung, 2003) at Chung-Sing National

University has charged that the University Law which was an amendment to the

Higher Education Act has had an unexpected consequence. When this law was

promulgated and enacted it was not foreseen that physical education classes at the

institutions of higher education would become elective courses. This situation has

tainted the attitudes of Physical Education Departments personnel because they

believe student numbers will decline without required physical education classes in

the curriculum (Tai, 2003).

The director has maintained that physical education instructors play an

important role in fulfilling the government's vision of improving the country's quality

of education and producing members of society who are more globally competitive.

He has also noted that if physical education instructors are to preserve their value,

they must clearly recognize their roles within higher education so that they can

persuade society and government to adopt measures that will counteract the negative

trends set in motion by this amendment.

Research Question

The research question for this study will be: To what degree have Physical

Education Departments made organizational improvements consistent with the

expectations for educational reform in institutions of higher education in Taiwan?

Purpose and Significance of the Study

The purpose of this study is to investigate the current status of Physical

Education Departments following a major educational reform in institutions of higher

learning in Taiwan (University Code, 1994). After determining whether any

improvements have been achieved, this research will attempt to identify the factors

associated with such improvement. Taiwan's higher education reforms have resulted

in a change in the status of Physical Education Departments from administrative level

two to level one. The director of a Physical Education Department, henceforth,

assumes more responsibilities.

As a result of the increase in status, aside from making changes in their

structure and accepting a greater number of responsibilities, Physical Education

Departments must also improve the quality of their faculty to ensure better teaching

and more research and curriculum. In addition, they also must improve facilities,

equipment, services provided to the school and community, organization management,

professional development, and leadership.

This research will investigate the current status of Physical Education

Departments following the 1994 Higher Education Reform to determine the degree to

which Physical Education Departments have made organizational improvement consistent with these higher education changes. In addition, this research will attempt to identify factors that are common to organizational improvement should any departmental improvement be found. The findings of this research will be available to Physical Education Departments and the government in an effort to contribute to the national goal of organizational improvement in higher education.

<div align="center">Definition of Terms</div>

The Ministry of Education (MOE). This ministry is in charge of administrative affairs in connection with academic, cultural, and educational matters. It supervises the highest administrators at the local levels with regard to the execution of programs under its jurisdiction. In cases where decisions made by the highest administrators at local levels are considered against the law or MOE regulations or in excess of local authority, the MOE may suspend or nullify such decisions once the MOE's action has been approved by a cabinet meeting of the Executive Yuan (Bureau of Statistics, MOE, 1995, p. 9).

Physical Education. A traditional component of higher education curriculum both in the United States and Taiwan, ROC that includes formal classes, sports and exercise, ethics, social values, and personal health (Lumpkin, 1990; McGinnis, Kanner, &

DeGraw, 1991; Morris, 1991; Powell, Christenson, & Kreuter, 1984; Pooley, 1984;

Sallies & Mckenzie, 1991; Slave, Laurie, & Corbin, 1984).

Physical Education Director (Chair/Supervisor). "The individual is directly

responsible for administration of the academic unit that includes the undergraduate

and graduate programs in Physical Education. This position may also be referred to by

other titles such as dean, chairperson, and coordinator of physical education,

depending on the organizational structure of the institution" (Cleave, 1988, p.6).

Physical Education (P.E.) Department. For this study this term will be defined as a

department within a university or college that focuses on the Physical Education and

Training of students participating in the department's curriculum. This department

since the implementation of University Law in 1994 belongs to the administrative

level one in a university hierarchy and is in charge of physical education courses and

the management of sports facilities.

CHAPTER TWO

REVIEW OF THE LITERATURE

Higher Education in Taiwan

Taiwanese higher education was first established in the Japanese occupation

period from 1895 to 1945 primarily to support Japanese colonial policy. When

Taiwan was restored to China in 1945, the Japanese academic system was soon

replaced by the Republic of China's higher education, which was adapted from the

American academic model of the 1920s. Since then, the American influences on

Taiwanese higher education have been significant in such respects as institutional

organization, curriculum, and degree structure (Altbach, 1989; Law, 1995; Wu, Chin

& Wu, 1989).

Higher Education Reform

Reform of the higher education system is intended to adopt new educational

concepts, revise old contents, and adopt new processes within the rapidly changing

environment (Department of Higher Education, 2002). Based on the *University Law*,

it is expected that universities will integrate their resources more effectively with

other departments of the institution to further development of higher education

(1994). The University Law provides an overall structure but offers universities the

freedom to make decisions regarding academics and teaching, which allows each

school to determine its individual culture. In 1995, the government in Taiwan launched the University Fund for public universities. The purpose of the University Fund is to make public universities less reliant on government by giving them the means to raise their own financial support (Ministry of Education, 1994; 2001; Department of Higher Education, 2002).

According to the Ministry of Education (2001) the nation's goals for higher education are the following:

1. To encode a complete provision of titles under the University Code and allow a university autonomy in determining school policies; promote development and enhance the quality of research; promote global education and establish a system of constructive competition; encourage participation from society and allocate teaching resources reasonably; establish a nationally standardized university accreditation system.

2. To fine-tune courses in vocational schools, enhance the proficiency of instructors in such schools, and promote a more diversified, professional, and distinctive vocational education.

3. To create a network that promotes lifelong learning, encourage public and private institutions to establish learning organizations; support the efforts of schools of all levels to participate in the goals of the revolution to promote

lifelong learning; set up the basis of a learning society; enhance liberal arts

education, increase overall quality of life, encourage more research and

promotion of native languages to preserve the uniqueness of Taiwanese

culture.

4. To promote an international education, support sharing of knowledge between

nations of the world, provide a basis for such sharing of knowledge, and

establish scholarships for overseas studies to nurture future professional

talents.

5. To combine resources and promote a 3-in-1-education system with teaching,

counseling, and mentoring as its core, and to support the efforts by schools to

formulate an education system that stresses knowledge of life in addition to

academic knowledge.

6. To prepare for the establishment of a national educational research institution

that will perform research on how to improve education.

7. To create a comprehensive foundation for the application of information-based

teaching, promote the use of information technology and education networks,

and increase the application of information technology in society; use

education networks to improve educational models and establish learning

organizations.

8. To provide a school environment that is safe and good for learning. (Ministry

of Education, 2001)

Physical Education in Higher Education

The year 1990 represents a landmark because it started the beginning of the

second century of required physical education courses in institutions of higher

education (Park, 1989). Required physical education courses at the undergraduate

collegiate level were historically designed to provide some form of activity for all

students (Considine, 1985). In essence, physical education courses were designed to

familiarize students with sports, dance, and fitness activities that they could pursue

throughout their lives (Trimble & Hensley, 1990). According to Miller, Dowell, and

Pender (1989), the purposes of physical education activity courses were to: (a) help

students develop a commitment to lifelong physical activity, (b) guide students toward

fitness and health, and (c) provide an environment in which students would enjoy

participating in physical activities. Davis (1993) described physical education courses

as uniquely contributing to students' general education by providing a complete

holistic liberal education, which includes an integration of mind and body.

Physical Education Curriculum

Historically physical education has been an integral part of the higher

education curriculum. In the last century, we have seen many changes in physical

education, particularly in the overall level of knowledge of the field and in sports science. Physical education focuses on the physical development and health needs of students (Hensley, 2000).

Pangrazi and Darst (1985) defined physical education as an educational process that increased people's knowledge and affected people's participation in exercise, sports, games, and outdoor-adventure activities, and their attitudes toward them. Stinson (1993) found that few urban students were willing to go through the motions of dressing for and participating in physical education. The reemergence of "movement education" as a significant part of the proposed physical education curriculum was seen as indication of the growing realization that universities needed to encourage students toward more active participation (Kerry, Cote, Hay, & Cote-Laurence, 1998).

Carlson (1998) found that most students did not regard physical education in the same way as they did many of their other subjects. Student attitudes were often linked to their expectation of the subject. The major factors that influenced students to adopt negative or neutral attitudes toward physical education were the physical education curriculum, the family, the community, and the individual (Moery & Karp, 1998).

Bibik (1999) examined college students and teachers in physical education

classes and found that it was important for teachers to be aware of their instructional behaviors and the consequences of those behaviors. Teachers learned to provide quality curriculum by understanding students' self-perceptions of their competence (Bibik, 1999).

Tjeerdsma, Rink, and Graham (1996) indicated that the goal of promoting positive student attitudes toward their bodies and physical activity is widely recognized, and that those goals should be an integral part of what physical educators do. This research also stated that physical education curriculum promotes positive student attitudes toward physical activity and has been recognized as one of the primary goals motivating physical education teachers.

Positive experiences in physical education activities during childhood and adolescence may increase the likelihood of engaging in an active lifestyle as an adult (Haywood, 1991). Martinek (1991) found that teachers' expectations for students' performance in physical education could positively influence teachers' behaviors toward students and in turn the students had positive behaviors toward teachers.

Physical Education in Taiwanese Higher Education

The Historical Progress of Physical Education in Taiwan

The historical progress of physical education in Taiwan reflects the socio-economic progress of Taiwanese society. Taiwan was a colony of Japan for 50 years

before the Second World War. Taiwan was freed from the control of Japan in 1945 and

ceded back to the Republic of China (KMT Government). In 1949, the KMT

government moved from Mainland China to Taiwan. The Taiwanese (KMT)

government committed a very large part of the national budget to national defense.

Budgets for education, including physical education were very limited due to defense

expenditure. Taiwanese people worked hard and earned just enough money to survive.

Education was not a government priority at the time. According to a report from the

Taiwanese Government Information Office, even 25 years after Taiwan was liberated

from Japanese occupation, the government still kept defense as its main focus and

tightly controlled key areas of the society such as the economy and education (The

Executive Yuan, R.O.C., 1988).

Beginning in 1975, a new team of government policy makers changed the

main national focus from national defense to the economy. Consequently, the

economy rapidly began to expand, and most people prospered. Education, though,

still was not a major priority of the government; physical education played no role in

the society (Tai, 2003). The Ministry of Education continued to control institutions of

higher education, such as universities and colleges (Epstein & Kuo, 1991). As time

passed, the Taiwanese people embraced the global trend toward democracy, which

had a significant influence on the field of education, especially higher education.

Universities and colleges sought independence and freedom in their specific academic and research areas. The Ministry of Education transferred power gradually to universities and colleges.

With the economic growth of the 1970s and 1980s in Taiwan, many people became prosperous and their life styles changed reflecting this new prosperity (Hsu, 1988). They began to spend more time and money on entertainment and recreation. Leisure sports received more attention. Most people started to participate in sports not as a result of social pressure, but merely for enjoyment and relaxation (Hsu, 1988). This changing perception of sports activities also increased the importance of physical education courses.

Physical education in Taiwan has long been a required course in elementary schools, junior high schools and senior high schools with explicit curriculum guidelines (Ministry of Education, 1994). This physical education requirement is still mandated by the Ministry of Education today. In contrast, in colleges and universities, for many years there were no specific regulations for physical education required by government mandate; each school had its own set of rules. No academic credit was given, but most schools required students to take physical education courses for at least two years. The course content varied from teacher to teacher, school to school; students could make their own choices about what they wanted to learn among the

various physical education courses schools offered (Tai, 2003). Colleges and

universities also provided various physical education courses from which students

could select those they preferred.

There are different types of schools, both public and private, which are

organized according to their purpose as defined within the higher education

classification system in Taiwan. These include:

Junior colleges, which may be public or private; universities of technology

and institutes of technology, having both government and private-sector

sponsors; universities and independent colleges, which have been established

by both the government and the private sector; normal universities and

teachers' colleges, which are public institutions; graduate schools, which may

be established in both public and private universities and independent colleges;

and public and municipal open universities (long-distance learning academies).

All private and public schools have a Physical Education Department except

graduate schools and long-distance learning academies. (Ministry of

Education, 2001)

The national physical education policy maintains the continuum of a balance

between physical fitness and mental soundness. The goals for physical education are

specified as follows:

1. to make students' minds sound and bodies healthy with a view to achieving a
   balanced development,

2. to cultivate students' sense of sportsmanship and establish esprit de corps,

3. to increase students' understanding of physical education and help them develop
   the custom of participation in sports,

4. to help students learn the proper techniques for playing sports so as to elevate
   sporting standards, to kindle students' interest in sports and to cultivate students'
   appreciation of the aesthetics of sports. (Ministry of Education, 1998)

The Impact of the New University Code on Physical Education

Physical Education in Taiwan was a required course at all levels of schooling

and was considered an important subject until 1994 (Ministry of Education, 1998;

1999). Unfortunately, in that year, physical education, which had been a required

program in four-year colleges and universities since the initial establishment of

Taiwan's education system, changed from a required course to an elective (University

Code, 1994).

The Ministry of Education (MOE) convened the first National Meeting of

University and College Presidents on September 24, 1994. The purpose of the

conference was to discuss credits, optional electives, and to determine the subjects to

be required at institutions of higher education in Taiwan. As a result of the conference,

physical education courses became optional, with some institutions requiring one or

two years of participation. Senior students would have the option of enrolling or not

enrolling in physical education. All students would begin to receive academic credit

for completing physical education classes (Lee, 1995; Lin, Huang, Chiang, & Lin,

1997).

Higher education institutions were given the responsibility of creating and

devising new physical education programs and curricula. As a requirement under the

new responsibilities, the institutions were forced to make attendance of physical

education classes optional instead of mandatory. In spite of the extensive documented

advantages of exercise, physical activity, fitness, and physical education programs,

chairs of Physical Education Departments were forced to comply with this mandate.

According to Huang (1999), physical education educators need to provide a

new pattern for physical education study within institutions of higher education. It is

essential for physical educators to devise new approaches, methods and strategies to

meet the challenges of the future; educational offerings in the new era must begin to

emphasize technology and increasingly, instructional experimentation (Huang, 1999).

Physical education educators are continually expected to be able to evaluate the

influence of new technology on teaching and to meet the needs of modern society

through department innovation (Davis, 1993).

Students Health Needs

The previous four-year core requirements of physical education have become a one- or two-year requirement in Taiwanese institutions of higher education. Some universities have eliminated physical education as a core requirement altogether, reducing it to the status of an elective (Ministry of Education, 2000). Other universities, although still allowing students to take classes, no longer award credit for courses in physical education (Ministry of Education of Taiwan, 2000). New data collected after the amendment of the Higher Education Act show that only 30% of students took electives in physical education during their college education (Chung & Hung, 1996). If this trend continues, the development of physical education in higher education will be thwarted and the contribution of a healthy lifestyle to academic performance may be compromised should the elimination of physical education occur (Yang, 2000).

According to the survey conducted by the Ministry of Education in Taiwan (2001), Taiwanese university students' physical fitness ranks lower than the physical fitness of the university students in Europe, America, Japan, and Mainland China. For example, male university students in Taiwan take over eight minutes to finish 1600 meters (one mile), while American students complete the same distance in less than seven minutes (Ministry of Education, 2001). Taiwan female university students

finish 800 meters in five minutes, while Japanese female university students need just

four minutes (Ministry of Education, 2001).

Recent research shows that Taiwanese university students are five to seven

pounds overweight by age 20. Other studies also indicate that the health of Taiwanese

students is worse than their European, American, and Asian counterparts (Ministry of

Education, 2001). Previously 15% to 20% of Taiwanese university students were

overweight, with this percentage increasing every year. The MOE (2001) stated that

the amount of time spent on physical activities has decreased as a result of the

university policy which no longer requires four years of physical education for all

students.

Physical inactivity frequently results in diminished health and consequently

the quality of life. Obesity, high blood glucose, high blood pressure, and high blood

lipids all occur more often among sedentary adults (Leslie, 2000). These problems

increase the risk for chronic diseases such as cardiovascular disease, various cancers,

Type II diabetes, and hypertension. Leslie (2000) asserted that a direct positive

relationship exists between leading a physically active life and developing long-term

good health. Unhealthy behaviors may take many years to present themselves

clinically, but there is a compelling reason to believe that helping students learn to be

active early in their lives will provide an important foundation for lifetime physical

activity (Leslie, 2000).

Physical education, which plays a major role in determining the health and

quality of life for students, plays a critical role in higher education institutions (Hung,

1998). Regular physical activity provides numerous health benefits—from leaner

bodies and lower blood pressure to improved mental health and cognitive functioning

(Leslie, 2000). Physical education programs promote physical activity and can teach

skills as well as form or change behaviors; they hold an important key to influencing

health and well-being across the life span. According to Allensworth and Kolbe

(1987), in order to improve the fitness of students, schools should rethink the design

and delivery of physical education programs. To provide healthy-lifestyle education, a

quality program of physical education must be a core requirement in all schools and a

central component in a comprehensive school health program (Allensworth & Kolbe,

1987). Those involved in the physical education environment in Taiwan, however,

currently face new challenges to which they must respond if they are to prevent

increased health risks to the population caused by sedentary living.

Social Need

The President of the International Olympic Committee (IOC), Juan Antonio

Samaranch, said in 1998:

"Sports are one of the most prevalent—and important—societal phenomena. We can find sports in every corner of the world. They are essentially inseparable from the daily lives of every individual and the influence of sports will continue to expand into the new millennium" (Segrave, 1998). In addition, he also thought that the formation of a complete human being would only be achieved through the assimilation of mental and physical activities.

Driven by advances in technology, prosperity in the world economy, and stability in international politics, popular sporting events such as Major League Baseball, the National Basketball Association, the World Cup, the four grand slams in tennis, professional golf tournaments, and the Olympics have become more popular. Physical education and sports are among the most important activities nowadays, and the sports industry is becoming increasingly important in people's lives. From playing sports for leisure to professional athletes, much attention is given to sports; sports seem to be constantly on every one's mind. Spurred by this unprecedented interest in sports, physical education has been pushed into a new era (Cheng, 1998).

Physical Education Department Upgrade

Education is the prime force supporting a nation's development and progress. The purpose of the Physical Education Department in universities is to offer physical education courses and activities for students and the community. In the past, there

were three administrative departments in a university: academic affairs, student

affairs, and general affairs. The Physical Education Department was a second-level

administrative department, which was set up under the Student Affairs Department.

However, with the passage in 1994 of Article 11 of the University Law, the Physical

Education Department was taken from the Student Affairs Department and moved to

the first administrative level (Ministry of Education, 1994; 2002). The Physical

Education Department has more responsibilities than just teaching regular physical

education courses; it also manages the sports facilities and provides services for the

university and the community.

Areas in which Physical Education Departments Need to Improve

Leadership

In pre-service teacher education, sport management, and corporate fitness, it

has been recommended that college/university faculty members serve as role models,

practicing what they preach and teach. If future educators are to fulfill the changing

roles that await them in the schools undergoing reform and restructuring, then they

must be provided with opportunities to witness and experience these new

management paradigms and leadership in their pre-service education. Administrative

and faculty leaders should also study and implement paradigms to meet the needs of

future employers.

Through observing the modeling of paradigm change by administrators and through participation in educational committees for change, Peter (1993) noted that physical educators can represent the paradigm changes happening in the profession, educate others on its importance in the academic world, and bring updated ideas to their committees to share. According to Kilbourne (1996), quality representation could make a difference when it is necessary for budget cuts or program elimination. If physical education teachers and leaders are to assume an integral role in educational reform and restructuring in order to produce a more effective, productive workforce (with increased capacities to be positive, contributing citizens), then preparation in the understanding and practice of transformational methods in curriculum, community empowerment, and management are necessary.

Hecht, Higgerson, Gmelch, and Tucker (1999) stated that most chairs in the 1960s did not deal with assessment, computers, diversity, distance learning, union contracts, and volumes of employment regulations. Boucher (1972) further stated that by 1975, physical education administration would be seen as complex. In order for administrators in this discipline to be qualified, they would need to be well educated and possess the traits of a teacher, philosopher, public-relations expert, architect and speaker. Physical educators were beginning to realize that administration should not be trial and error. Administrative theory was needed to understand how to handle and

solve problems effectively (Boucher, 1972).

The Directors' Role in Physical Education Departments

An effective department director tries to optimize the department's autonomy

in order to enlist followers' support and efficiently perform tasks and manage

resources (Brown & Moshavi, 2002). Directors of Physical Education Departments in

higher education in Taiwan may need to re-assess the state of their departments and

determine the need for change. Yang (1985) identified personal and organizational

reasons that influence the Physical Education Department directors in their

administrative decision-making. In Yang's study (1985), Physical Education

Department directors are generally goal-oriented, creative, responsible, active and

authoritative. Most of the directors think they have a good relationship with their

followers and a good management philosophy in their department.

According to Yang (2001), an ideal administrative director of a college

physical education program should have five areas of focus: understanding the

department's mission, improving the organizational culture, knowing the

administrative operation, having charisma for organizational cohesion, and using and

developing resources effectively. Yang does not consider, however, that when an

organization needs to innovate and change, one of the most important factors that

determine success is visionary leadership. A successful visionary leader shares

organizational goals, empowers people, makes appropriate organizational changes, and encourages strategic thinking (Nanus, 1992). Under the educational policy and environmental change, directors of Physical Education Departments in Taiwanese universities need to lead their departments to offer more services for schools and communities. Strategies, performance, and evaluation of Physical Education Departments will be determined largely by the leadership they receive.

Curriculum

Physical education curriculum was designed in accordance with the regulations and policies established by the Ministry of Education for governing Departments of Physical Education. Traditionally, physical educators hold the power to determine the physical education curriculum in the higher education institutions in Taiwan. There is no standard college physical education curriculum; there exists only physical education objectives without any educational philosophy statement (Huang, 1999). Therefore, every college and university could conceivably have its own physical education curriculum based on its own goals. Since the University Law was enacted in 1994, the attitude of Physical Education department administrators toward physical education seems to have significant influence on what role the program and department plays within an institution.

When deciding which physical education activity courses should be offered, institutions must attempt to satisfy college and university student needs and interests while paying heed to student well being, the development of physical ability, and lifelong fitness (Edginton, Davis, & Hensly, 1994). In a study by Evaul and Hilsendager (1992) to determine which objectives were prevalent among institutions physical education activity courses, skill acquisition ranked the highest followed by fitness, knowledge, enjoyment, and self-esteem. In contrast, Ennis (1992) postulated that physical education activity course requirements should focus on what students are most interested in. This concept was supported by Miller, Dowell, and Pender's (1989) study. Their study revealed that students were mostly interested in physical education activity courses that provided health-related fitness, aerobics, and conditioning.

Trimble and Hensley (1990) found that the most popular physical education activity courses with college and university students were individual sports and fitness activities. Yang's (1995) study revealed the most popular physical education activity course of male college and university students in Taiwan was tennis, followed by badminton, and table tennis. On the other hand, for the female college and university students, the most popular physical education activity course was aerobic dance, followed by table tennis, and badminton. As Lumpkin and Jenkins (1993) noted,

when required physical education activity courses meet the needs of students (fun,

fitness, and lifetime skill development) then students will participate in these courses

and in turn will improve their quality of life.

Service

During the First National Physical Education Meeting in Taiwan, 10 proposals

were made to promote the vision for physical education in the 21st century (Chang,

1999). These included:

1. Improving the recreation areas for both urban and rural areas.

2. Balancing the sports facilities between urban and rural settings.

3. Improving the recreation exercise program.

4. Improving the citizens' physical health.

5. Providing effective physical education in school.

6. Improving sports competition.

7. Encouraging private sponsorship of physical education development.

8. Improving communication with other countries on physical education.

9. Improving communication with China in the area of physical education.

10. Establishing a benefit system between the sports industry and physical

   education development. (Chang, 1999)

Information Technology

One component in the process of change is the infusion of technologies into the learning landscape. Administration and research facilities in higher education have adopted technologies as a matter of course as tools for accomplishing their tasks (Razik & Swanson, 2001). However, the teaching function has not universally demonstrated a need for new tools, resulting in a slow rate of adopting of technologies in the academic arena (Razik & Swanson, 2001).

In most organizations including institutions of higher education, Information technology has assumed greater visibility, scope, status, and power in recent years (Cezar, 2002). The major impetus for increased use of technology has been the Internet and the Web, which during the past few years have attained new significance in all facets of society. As West (1996) stated that the time is right for Information Technologies (IT) to play a major role in shaping that culture rather than as in the past, trying to fit IT into the organizational culture. As information technology developed in education there was minimal thought given to the utilization of a strategic plan for implementation. For example, computer use for classroom instruction, and the building of computer labs often started as a 'grassroots' operation. If a faculty member had some knowledge and interest in Information Technology and championed its use, she/he was more often than not given the green light to purchase

and put into operation technology. What is happening today is that many institutions

are taking on information technology as a keystone strategy for advancing their

missions and programs of the future (West, 1996).

Computers have assumed a ubiquitous presence in the last decade with

evidence of this technology increasingly apparent in homes, businesses, and

educational institutions. Media coverage of the "computer revolution" has paralleled,

and no doubt fueled this growth. Increasingly, the Internet and World Wide Web are

promoted not only as convenient and powerful tools, but also, and often more

importantly, as explicit evidence of the transformative potential of computer

technology.

Facilities/Equipment

In Taiwan, a Physical Education Department in a university is necessary to

operate and manage the schools' sports facilities in an economical and convenient

way so as to offer recreation areas for the community (Lin, 1996).

College and universities can provide a broad learning opportunity and share

resources to diverse constituencies. Institutions of higher education can restructure

themselves to infuse new resources or re-allocate existing resources (Aguirre &

Martinez, 2002). Effective operation and management of school sports' facilities

produce on a win-win situation among the government, schools, and customers (Sung,

1997).

Liaw (1997a) identified four factors for consideration in operating and

managing sports facilities with long-term vision: (a) First, improve the multi-

functional structure of the sports facilities, (b) Second, combine the resources for the

schools and communities, (c) Third, allow the University Fund to impact schools in

such a way that they raise their own independent finances, and (d) Fourth, establish a

new social role for physical education. Chien (2001) also suggests three strategies for

operating and managing the sports facilities of Taiwanese universities and colleges.

These three strategies include design of sports facilities, improvement in the quality of

service, and the enhancement of the role in society played by the Physical Education

Department of the university. Liaw (1997b) identified eight factors to be considered

for effectively operating and managing the sports facilities in Taiwanese universities

and colleges. These eight factors are: Planning and Service, Financial Management,

Management Systems, Risk Management, Sports Marketing, Resource Development

and Implementation, Sports Activity Promotion, and Human Resource Management.

Professional Development

Professional development focuses on the idea of planned activity that leads to

the personal and professional growth of an individual, whereas professionalism also

refers to the ability or willingness of a professional to adhere to and recognize the standard practices of one's profession (Johnson, 1998).

Professional development opportunities generally offered by institutions include, but are not limited to, in-service programs, sabbaticals, and training in new technology. Professional development takes place on an institutional basis as well as on an individual basis. On the institutional level, professional development is seen as a means of increasing staff productivity and involvement (Magalene, 2003). In professional development from an individual standpoint, individuals prepare their own plans for personal and professional development. Educators are proactive in seeking out and participating in professional development activities. Magalene (2003) found that individuals become involved in professional development activities such as mentoring, sponsorships, conferences, leadership training programs, and professional association activities.

Factors Associated with Organizational Improvement

Organizational Change

All organizations are concerned with adapting to changes and improvements that occur in their environments whether the changes are technological, economic, political, or social; or whether the organizations are product-oriented or service-oriented (Downs, 1967).

Organizational context is key to the pervasiveness of change. "Change occurs more quickly where organizational size is small, where there is low structural and task complexity, and where mergers and amalgamations sharpen the search for a relevant organizational form to cope with the new situation" (Greenwood and Hinings, 1996, p. 313). Change involves innovation and organizational learning.

Not only is there a link between change and learning but there is also a link between learning and cognition. Change from one archetype to another involves designing new organizational structures and systems, learning new behaviors and interpreting the phenomena in new ways. (Greenwood and Hinings, 1996, p. 314)

An organization's ability to change, to innovate, is based on the "generation, acceptance, and implementation of new ideas, processes, and services" (Thompson, 1969, p. 5). Likewise its survival and self-renewal is based on providing important functions in an efficient manner and doing it better than some other organization (Downs, 1967). The improvement process may address job design or re-design; technology, including knowledge and new information; job skills; organizational structure; and relationships to power, responsibility, and accountability (Hamilton, 1988).

Change in Organizational Structure

All organizations have structure; it is the anatomy of an organization.

Structure is the framework within which the organization functions (Dalton et al.

1980). Hall (1977) suggested that structure has two basic functions: "First, structures

are designed to minimize or at least regulate the setting in which power is exercised...,

decisions are made..., and ... the organization's activities are carried out" (p. 109).

Organizational structure is important to the performance (i.e., efficiency, moral, and

effectiveness) of organizations (Van de Ven, 1976).

The structure of the organization defines the direction and frequency of work

activities and information flows and links these to the differentiated roles within and

among departments or divisions of the organization (Galbraith and Nathanson, 1978).

Claycomb, Germain, and Droge (1999) described the structure of an organization as

the framework for how the organization "....divides its work into distinct tasks and

then achieves coordination among these tasks" (p. 6). A number of other studies also

support the argument that strategies lead to structural changes (Germain, Droge, &

Daugherty 1994; Larson 1994).

Organizational structures are designed to provide additional incentives. The

structure and design of an organization attempts to bring coherence between the

mission and goals of the organization, the plan for the division of labor necessary to

achieve the goals, information-processing requirements, coordination of various units or departments within the system, and the skills and knowledge of the people who will do the work (Galbraith, 1977).

The design of the organization consists of two choices: first, the kind of structure, reward system, and process to be adopted; and secondly, the decision as to how to get from where it is to where it wants and needs to be (Galbraith, 1977). Structural organizational change is concerned with adjustments and redesigns to maximize goal attainment in the most effective manner. Structural changes can be a means to integrate the individual and organization by clarifying jobs, procedures, and directions in such a way as to improve production, provide necessary information, and offer opportunities for acquiring new knowledge and skills.

Organizational Learning

A name frequently associated with the concept of the learning organization today is Peter Senge. Senge (1990) defined the learning organization as one "where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning how to learn together" (p. 3).

Simon (1969) defined organizational learning as increased insights and successful restructuring of organizational problems, as reflected in an organization's

structure and performance. An important implication of this perspective, as relates to

this study, is that organizational knowledge and structure are related and that

organizational knowledge is reflected in organizational actions. Further explored by

Slater and Narever (1995, p. 63), who write,

> At its most basic level, organizational learning is the development of new
>
> knowledge or insights that have the potential to influence behavior (Fiol &
>
> Lyles, 1985; Huber, 1991; Simon, 1969; Sinkula, 1994). Presumably, learning
>
> facilitates behavior change that leads to improved performance (Fiol & Lyles,
>
> 1985; Garvin, 1993; Senge, 1990; Sinkula, 1994).

Slater and Naver (1995) called for further research into learning and knowledge as

they relate to behavior and structure. They suggested that all businesses competing in

dynamic and turbulent environments must pursue the processes of learning (p. 71).

> Given the limited empirical evidence regarding organizational learning, the
>
> assessment of its benefits and the development of a clear understanding of the
>
> processes of organizational learning and the management practices that
>
> facilitate or hinder organizational learning should be a high priority
>
> (Marketing Science Institute, 1993).

The result of learning is knowledge. Thus, it may be argued that whatever is to be learned about organizational learning also relates directly or indirectly to organizational knowledge.

Organizational knowledge assumes that learning can take place, and knowledge be accumulated and utilized, by a group or system, not just by individual human beings. Theorists such as Chandler (1962), Katz and Kahn (1966), and Thompson (1967) suggested that long-term survival and growth is the ultimate criterion of organizational performance and is the result of organizational learning. Organizations must learn in order to survive (Barnard, 1938; Lawrence and Dyer, 1983; Lawrence and Lorsch, 1967).

Knowledge is a result of learning. More specifically, organizational knowledge is the result of organizational learning (Fiol & Lyles, 1985; Huber, 1991; simon, 1969). Slater and Narver (1995)suggested, "At its most basic level, organizational learning is the development of new knowledge or insights that have the potential to influence behavior" (p. 63). Although knowledge is the result of learning, learning does not always increase the learner's effectiveness, or even potential effectiveness...entities can incorrectly learn, and they can correctly learn that which is incorrect" (Slater and Narver, 1995, p. 89). Huber (1991) further suggested the most appropriate measure of knowledge is intentional activities.

Organizational learning is dependent on the integration of multiple and inherently divergent perspectives and types (Purser & Pasmore, 1992). Yet, organizational characteristics influence the system's ability to learn. Furthermore, organizational structural configurations, arenas for dialogues and integration processing are necessary mechanisms for organizational learning (Schein, 1993).

Clear Concept of the Organization's Mission

Clear purpose and concerted efforts of all workers to collaborate in an effort to accomplish the mission of the organization is an essential element of optimal organizational performance, whether these efforts are identified as management by objectives (Drucker, 1980) or as visioning (Bennis, 1985). The mission is a unifying thought that gives meaning and direction to activities within the system, indicates expectations and outcomes as a result of work activities, and helps explain accomplishments and change. It is from the mission statement that more specific and operational objectives are established.

Formalization and Standardization of Procedure

Another accepted tenet of modernization in an organization is the formalization of work through establishment of official rules, policies, and procedures, the "administrative norms" whereby favors are eliminated and everyone in the same problem category is treated alike (Thompson, 1975). Steers (1977) suggested that

formalization of the organization may be a function of where the system is in the

improvement process. Accordingly, when the organization is innovative, flexibility

may serve to optimize search behavior for creative problem solving. As the course

becomes more decided, the structure becomes more formalized for effective program

implementation. Brown (1980) indicated that formalization and organization are

essential for regulation, task completion, and efficient use of human potential,

information flow, and management of differences.

Information Technology (IT)

Corporate spending on Information Technology has grown steadily over the

past decade, a continuation of the rapid growth in information technology investment

that has occurred in the United States since the 1960s (Margherio, 1997; WITSA,

2002). The current level of Information Technology spending has led some

researchers to argue that IT has helped to minimize the recent U.S. economic

slowdown and is helping to lead the current recovery (Chabrow and Colkin, 2002;

Greenspan, 2002).

Information Technology value is maximized through the coordinated

implementation of a system of technological and organizational change (Black &

Lynch 1997). It is through such change that firms create unique capabilities that

enhance operational performance and generate profits (Bharadwaj, 2000; Zhu & Kraemer, 2002).

Numerous firms have been implementing this management approach in an attempt to create specific organizational capabilities for performance improvement and competitive advantage (Lawler, et al. 2001). Information Technology is a key enabling component of organizational improvement efforts. For example, an organization can support the establishment of teams by moving information to decentralized groups accurately and in a timely manner. Information Technology is also a core component of statistical process control systems, enabling firms to take advantage of these systems for quality improvement (Ramirez, 2003).

Information is vital to an organization. It is a fundamental component of an organization's production and planning processes and is utilized in every primary and support activity of its value chain (Porter, 1985). Information can even be viewed as a necessary asset, similar to physical assets, essential for worker productivity and efficient corporate production (Brynjolfsson & Hitt, 1994). Organizations are information processors whose efficiency is determined by the amount of information to be processed and the capacity to do so (Galbraith, 1974). Information Technology is central to information processing and is a strategic option for increasing the capacity of processing information. By doing so, Information Technology enables a

deeper understanding and subsequent automation of an organization's core processes

(Galbraith, 1974; Leavitt & Whisler, 1958; Zuboff, 1985).

There are costs associated with using Information Technology and its

information processing capabilities. These include the costs of hardware investment,

software development, employee training, and related maintenance and support. At a

functional level, these costs can be viewed as those associated with acquiring,

processing, and disseminating information (Galbraith, 1974). Organizations, in their

quest for profit maximization, are motivated to invest in Information Technology if

doing so reduces costs, improves qualities, or improves overall operational efficiency

(Varian, 1992).

Knowledge Management (KM)

Drucker (1998) stated that knowledge is crucial in the development and

evolution of society. Apart from labor, land, capital, knowledge is one of the most

important inputs of production in a knowledge-based economy. For an organization,

the effective use and recording of knowledge influences the organization's survival in

a competitive world. As knowledge becomes increasingly important, the

accumulation of knowledge becomes an important factor in determining who wins the

competition. Being able to organize and use knowledge at any time will allow one to

achieve success faster than others. This concept has been promoted since the 1990s

and is becoming more realistic with the advent of knowledge management.

Drucker (1998) also stated that a non-profit organization or a government

agency is actually in more urgent need of knowledge management. In recent years,

business corporations have promoted, knowledge management, and extensive quality

control in order to adapt to the more competitive world and to enhance productivity

(Drucker, 1998).

Education is about life-long learning. By developing learning communities

that stay connected, even after a formal class is over, a degree is conferred, or a

project is completed, educational organizations can become a continuous source of

value to every sector of society (McKee, 1999). Raisinghani (2000) acknowledges

that while knowledge management is generally discussed within the parameters of the

business world, its implications for education are equally relevant. With technology in

a constant state of change, a rational course of action for the field of education is to

look to the business environment for guidance in making use of technology and

knowledge management practices. Successful knowledge management systems

require a technology component and a human component.

Another important area that knowledge management can contribute to

education is in decreasing the knowledge gap between practitioners and academics. In

almost all fields in which there are both researchers and practitioners there is a gap between organizational research and field practice (Glaser, Abelson, & Garrison, 1983; Rogers, 1995). Changes in the economic and political climate of society spurred by the shift to a knowledge-based society have forced more collaboration attempts between researchers and practitioners (Ryanes, Bartunek, & Draft, 2001). The literature supports the idea that knowledge creation, dissemination, and utilization can be increased through deliberate institutional strategies and tactics such as knowledge management (Choo, 2000; Leonard-Barton, 1995; Stewart, 1997). Educational practitioners, faced with pressure to produce results from educational reform efforts, have produced more practitioner-based research initiatives.

Education is one of the world's oldest knowledge management professions (Gladstone, 2000). In the 21st century the teacher, professor, instructor, trainer, and other educational professionals will continue to rise in prominence and importance. Drucker (1994) stated that how well an organization, an industry, a country does in acquiring and applying knowledge will become the key competitive factor. The key competitive factor for education is represented as increased learning outcomes for all students.

In a school, due to the high mobility of personnel, administrative knowledge must be passed constantly on to new employees (Greengard, 1998b). If the old

personnel can store all detailed information of administration in a computer before

leaving, transition problems can be markedly reduced. Many educational

organizations, including schools and professional educators across all disciplines of

education, have engaged in communities of practice or what the field of education has

defined as learning communities or knowledge networks. Courseware development,

successful research programs, and administrative practices are all dependent on

sharing knowledge to boost performance (McKee, 1999).

Chang (2002) stated Knowledge Management in a school setting includes both

administration and teaching. In terms of administration, Knowledge Management

embodies information about the school, administrative procedures, meeting records,

confidential documents, and documentation of important activities. In terms of

teaching, knowledge management includes the number of teachers, expertise of each

teacher, allocation of school resources, school facilities, course information, and much

other information required for efficient teaching.

Summary

The educational reform of the higher education system is intended to adopt

new educational concepts, revise new contents, and adopt new processes within the

rapidly changing environment. The New University Law expected that the

universities would integrate their resources more effectively in the future development

of higher education.

In Taiwan, the Physical Education Department has historically been an important department in higher education institutions. Since 1994, most universities have moved the Physical Educational Department to the first administrative level so that it can take on more responsibility and better manage the money necessary for its programs. In 1994, physical education, which had been a required four years program in four-year colleges and universities, changed from a course being required for four years to an elective for most students beyond the first year of college or university. The Physical Education Departments of higher education institutions in Taiwan must be able to implement new and innovative strategies for improvement and organizational development in order to lead the educational institutions into the future.

CHAPTER 3

METHODOLOGY

Introduction

This study, in order to address the proposed research question, will investigate

the current status of higher education Taiwanese Physical Education Departments in

order to determine the degree of organizational improvement that has occurred since

the mandated national education reform. If varying degrees of organizational

improvement are found, this research will attempt to identify common factors

associated with departments demonstrating organizational improvement.

Research Design

According to the review of the literature, Physical Education Departments face

numerous challenges after the elevation of their status to level one. This change in

status has required substantial organizational improvements in order to fulfill the new

goals for higher education.

A questionnaire will be utilized to determine the degree to which Physical

Education Departments have successfully addressed the mandated organizational

change. The review of literature revealed that Physical Education Departments are

required by educational reform to address seven specific areas for improvement: (a)

curriculum, (b) service, (c) Information Technology (IT), (d) facilities and equipment,

(e) professional development, teaching, and research, (f) management, and (g)

leadership.

A questionnaire will be developed by and for this research in order to gather

the data necessary to analyze the present status of organizational improvement. The

questionnaire will be distributed to and completed by the chair of the Physical

Education Departments. Scores will be calculated from the responses given on the

questionnaire and reported in a manner that will reflect varying degrees of

organizational improvement.

In addition, techniques with successful records of achieving organizational

improvement primarily in non-educational fields will also be included in the Review

of the Literature. One method found to be effective in business and other fields that

may also be appropriate for educational organizations is Knowledge Management

(KM). This research will distribute a survey to the same population of Physical

Education leaders designed to determine the degree to which KM is presently utilized

as a method of assisting organizational improvement. Should varying degrees of

organizational improvement be obtained, this research will attempt to determine if

KM is associated with that organizational improvement.

Population of the Study

The population for this study will consist of the chairs of the Departments of

Physical Education in all public and private non-religions higher education

institutions in Taiwan. According to Ministry of Education, in 2003 there were 158

public and private higher education institutions in Taiwan delineated as follows: 67

universities, 75 colleges, and 16 junior colleges. All 158 chairs of Physical Education

Departments from these institutions will be surveyed in order to provide these data for

this study.

Sources of Data

The data to be used to determine organization improvement will be collected

with a questionnaire that will be developed by the researcher for this study. The

survey will be consistent with and based upon the seven factors found in the review of

the literature pertaining to the mandated organizational improvement that was

previously described and required by the education reform.

The questionnaire that will be used to gather data on Knowledge Management

will be adapted from a national survey used in Taiwan by Su (2002). The Knowledge

Management survey instrument respondents will be requested to provide their opinion

about the utilization of Knowledge Management as used in Departments of Physical

Education. A five-point Likert scale will be used to determine the degree to which Knowledge Management may be utilized by department heads.

The final section will ask respondents for demographic information including an opportunity for respondents to submit additional comments on the status of organizational improvement within Physical Education Departments. All questionnaires will be translated into both Chinese and English languages.

Data Collection

A packet containing a cover letter, organizational improvement questionnaire, KM questionnaire, and a self-addressed, stamped envelope will be mailed to the chairs of Physical Education Departments at every non-religions institution of higher education in Taiwan. The cover letter will explain the purpose of the research and the voluntary nature of participation. The data collection will be conducted from July 15, 2004, until July 31, 2004.

Anonymity

All surveys will be returned without names or other identifying marks on them. It will not be possible to identify schools or individual department heads thereby ensuring anonymous participation.

Variables and Level of Data

The primary variable will be the degree to which Physical Education

Departments have successfully met the mandate for organizational improvement as directed by the Ministry of Education in Taiwan. Organizational improvement will be reported for each department by one of six possible degrees. The highest degree of successful organizational improvement, characterized as exemplary, will denote those Physical Education Departments reported by their leadership as having met all seven criteria with a majority of positive responses in each of the seven domains. The second highest degree of successful organizational improvement, denoted by outstanding, will be those Physical Education Departments reported by their leadership as having met six of the domains with a majority of positive responses in six of the domains with a minimum of one positive responses in the other domain.

The third degree of successful organizational improvement will be characterized by notable. A notable classification will require a majority of positive responses in at least five of the seven domains with at least one positive response in each of the other two domains. The fourth descriptor will be acceptable and require at least a majority of positive responses in four of the domains and one positive response in at least two of the remaining three domains. The fifth degree denoting a level of organization improvement will be denoted as needs improvement and will be characterized as having a majority of positive responses in at least three domains and at least one positive response in two of the remaining four domains. The final level of

improvement will be characterized as unacceptable. This categorical rating will be

assigned to those departments that cannot meet the criteria of needs improvement.

Any department meeting the minimum number of domains but not having sufficient

positive responses in the remaining domains will automatically be characterized by

the next lower descriptor.

These classifications may be summarized as follows:

Table 1:

Scoring of Organizational Improvement Questionnaire

Descriptors	Minimum # of Domains Majority	Minimum # of Domains One Positive
Exemplary	7	
Superior	6	1
Notable	5	2
Acceptable	4	2
Needs Improvement	3	2
Unacceptable	all others	

The level of data for the degree of positive organizational change will be

ordinal. The ordinal rank of these data will be reported by descriptors that are related

to the number of domains reported as reflecting organizational change consistent with

the Taiwanese Educational Reform Act of 1994.

The secondary variable collected will be the score on the Knowledge

Management questionnaire. These questions will be scored by considering Strongly

Agree and Agree responses as indicators of the utilization of Knowledge Management within the organizational structure of Physical Education Departments. Each department will be given a score based upon the total number of responses supporting Knowledge Management.

The level of data for the Knowledge Management variable will be ratio. This classification of data, i.e., ratio, will be based upon an equal interval scale between any two consecutive scores, which will be calculated by summing the number of questions responded to in a manner that supports the presence and use of Knowledge Management. Further, a score of zero supportive responses will be possible from a respondent who does not identify any presence or utilization of Knowledge Management, thereby providing ratio level data.

The third source of variables will be from the descriptive questionnaire. These data will be reported in nominal, ordinal, and ratio levels.

Treatment of the Data

The first analysis will consist of determining the degree to which Physical Education Departments have made organizational improvement. These findings will be reported as calculated and without judgment regarding the level at which the findings represent national expectations of the Ministry of Education.

Should any level of organizational improvement be found, the scores of the

Knowledge Management questionnaire will be correlated to the descriptors of

organizational improvement and any relationships between variables will be

computed and reported.

Further, the organizational improvement descriptors will be dichotomized into

Successful (Exemplary, Outstanding, Notable, and Acceptable) and Unsuccessful

(Needs Improvement and Unacceptable). The Knowledge Management scores will be

used as predictor variables for potential predictability of Successful and Unsuccessful

achievement of organizational improvement requiring the following null hypothesis.

Null Hypothesis

There will be no experimentally important or experimentally consistent

predictability of organization improvement of Physical Education Departments by

domain utilizing Knowledge Management scores as the predictor variable.

A priori Assumptions

Experimental importance for this study will be set at 70 percent correct

predictability. Experimental consistency will be set at an alpha level of .05.

Statistical Procedure

Discriminate function analysis will be used in this study to compute the

percentage of correct predictability and alpha level. Computer software will be used

to calculate the appropriate statistics. Discriminate Function Analysis (DFA) is a

nonparametric statistical procedure originally developed "to classify subjects into one

of two clearly defined groups" (Mertler and Vannatta, 2002). More recently, DFA has

been utilized as a kind of *post hoc* procedure for MANOVA analyses. This research

will employ DFA in its original use whereby interval/ratio level variables are utilized

as predictor variables analogous to multiple regression with the distinction that the

criterion variable in DFA is nominal and dichotomous rather than interval/ratio as in

multiple regression. By using a dichotomous variable, a nominal variable may be

considered equal interval as a result of the identity property in which a single interval

between the two levels of that variable is equal to itself (Sarle, 1996). Other analysis

will be made as appropriate.

<center>Additional Analysis</center>

Additional analysis will be conducted in a similar manner for variables

reported in the descriptive questionnaire. These analyses will be conducted and

reported as appropriate and meaningful relative to the main findings.

<center>Limitations of the Study</center>

The survey will be conducted in a Chinese/English version to minimize the

problem of translation and interpretation of meaning; however, cultural differences

may still exist. Such difference may influence interpretation of the translations of the

questions.

Delimitations of the Study

This study is designed to assess the organizational improvement for Physical

Education Departments. The results obtained are not generalizable to other college

personnel due to the uniqueness of the Physical Education Departments' requirements

under the new educational reform.

CHAPTER FOUR

RESULTS

Introduction

The research question for this study was determine to what degree have

Physical Education Departments made organizational improvements consistent with

the expectations for educational reform in institutions of higher education in Taiwan?

A questionnaire was utilized to determine the degree to which Physical Education

Departments have successfully addressed the mandated organizational change.

Response Rate

For this survey, 150 questionnaires were mailed to participants during the

month of August 2004. The population for this study was the chairs of the Department

of Physical Education in all public and private non-religions higher education

institutions in Taiwan. There were 118 questionnaires collected for a response rate of

79%. Of the 118 returned, six were disqualified because of incomplete responses in

numerous areas. This provided for an effective response rate of 75%.

Demographic Result

This research classified the schools that participated into two categories: 54

(48%) were university level (31universities, 8 normal colleges, 8 management

colleges and 7 military schools) and 58 (52%) were vocational institution level (11

Age

The oldest participant was 58-years-old, the youngest was 28 with the average

age of 44-years-old for all respondents. Ages were divided as reported in Table 4.

Table 4

Frequency and Percentage of Age

N=112	(Years Old)	Frequency	Percentage
1	Under 35 Years	15	13%
2	36-42 Years	40	36%
3	43-49 Years	29	26%
4	Above 50 Years	28	25%
	Total	112	100%

Gender

There were approximately five times more males than females in this study.

Specifically, there were 93 males and 19 females. These findings are presented in

Table 5.

Table 5

Frequency and Percentage of Gender

N=112	Frequency	Percentage
Male	93	83%
Female	19	17%
Total	112	100%

Education Level

Of the chairs of the Physical Education Departments, two had less than a

Bachelor's degree, 45 had a Bachelor's degree only, 51 had a Master's degree, and 14

had a Doctorate degree. These findings are presented in Table 6.

Table 6

Frequency and Percentage of Education Level

	N=112	Frequency	Percentage	Valid Percent	Cumulative Percent
1	Less than Bachelor's	2	2%	2.0%	2.7%
2	Bachelor's	45	45%	40.2%	42.0%
3	Master's	51	51%	45.5%	87.5%
4	Doctorate	14	14%	12.5%	100.0%
	Total	112	100%	100.0%	

Professional Rank

The participants were categorized by professional rank as follows: 25 were

professors, 37 were associate professors, nine were assistant professors, and 41 were

lecturers. These findings are presented in Table 7.

Table 7

Frequency and Percentage of Professional Rank

	N=112	Frequency	Percentage	Valid Percent	Cumulative Percent
4	Lecturers	41	37%	36.6%	36.6%
3	Assistant Professors	9	8%	8.1%	44.7%
2	Associate Professors	37	33%	33.0%	77.7%
1	Professors	25	22%	22.3%	100.0%
	Total	112	100%	100%	

Education about Knowledge Management (KM)

Of the chairs of the Department of Physical Education, 56% had not had any

formal education in Knowledge Management while 44% had some formal education

in Knowledge Management. Their formal education ranged form 0.5 to 3 years with

an average duration of 1.5 years. These findings are presented in Table 8.

Table 8

Frequency and Percentage of Reponses Knowledge Management (KM) Education.

	N=112	Frequency	Percentage
1	KM	63	56%
2	No KM	49	44%
	Total	112	100%
Minimum Years 0.5	Maximum Years 3	Average Years 1.5	SD=0.7

Teaching Experience

Teaching experience ranged from 1 to 28 years, with an average of 12.1 years.

Teaching experience was divided into four categories as reported in Table 9.

Table 9

Frequency and Percentage of Teaching Experience

N=112	Frequency	Percentage	Valid Percent	Cumulative Percent
1 Less than 5 Years	22	20%	19.6%	19.6%
2 6-10 Years	30	27%	26.8%	46.4%
3 11-15 Years	26	23%	23.2%	69.6%
4 Above 15 Years	34	30%	30.4%	100%
Total	112	100%	100%	
Minimum Years 1	Maximum Years 28	Average Years 12.1	SD=6.9	

Administrative Experience as Chair

The number of years serving as the chair of the Department of Physical

Education ranged from one to six years with an average of 2.7 years. Three years

serving as the chair constitutes a typical term for administrative experience as chair.

The number of years served as a chair was divided into less than three years and three

or more years. These findings are presented in Table 10.

Table 10

Frequency and Percentage of Administrative Experience as Chair

N=112	Frequency	Percentage
1 Less than three years	85	76%
2 Three years and above	27	24%
Total	112	100%

Minimum Years 1	Maximum Years 6	Average Years 2.7	SD=1.3

Physical Education Department Status

Since the Taiwan higher education institutional reform in 1994, the MOE

expected drastic improvements by Physical Education Departments especially in the

following seven areas. Table 11 indicates that the chairpersons are positive toward the

MOE and expectations shown by domain.

Table 11

Chairs Positive to and MOE Expectations by Domains

N=112	Frequency	Percentage
1 Curriculum	112	100%
2. Service	112	100%
3. Information Technology	112	100%
4. Facilities and Equipment	112	100%
5. Professional Development	98	88%
6. Management	112	100%
7. Leadership	112	100%

The next 27 questions were designed to assess the seven specific areas of: (a)

curriculum, (b) service, (c) information technology (IT), (d) facilities and equipment,

(e) professional development, teaching, and research, (f) management, and (g)

leadership. The results from these 27 questions are presented in the following Tables.

Curriculum

According to the responses in Table 11, all Physical Education Departments

have increased the number of new courses in their curriculum, and designed small

classes to promote exercise. As a result, students were more satisfied with physical

education activity courses, and more students elected to enroll in physical education

after the higher education reform. These finding are presented in Table 12.

Table 12

Frequency and Percentage of Curriculum

N=112 Question	Answer	Frequency	Percentage
1. Increase or decrease in new P.E.	Yes	100	100%
courses?	No	0	0
Minimum 2 Maximum Years 15		Mean 8.3	SD=2.8
2. Has designed small P.E. classes?	Yes	100	100%
	No	0	0
3. Have more students electing P.E.	Yes	100	100%
course	No	0	0
4. Students satisfied P.E. courses?	Yes	100	100%
	No	0	0

Service

All Physical Education Departments have offered more service to school and

off-campus communities as well as provided sports facilities to all users, which

include students, faculties, and residents in the communities.

Table 13

Frequency and Percentage of Service

N=112 Question	Answer	Frequency	Percentage
5. P.E. department offer new services to school?	Yes	100	100%
	No	0	0
6. P.E. department offer new services to community?	Yes	100	100%
	No	0	0
7. Provided sports facilities to community	Yes	100	100%
	No	0	0

Information Technology

All Physical Education Departments have improved computer hardware and

software equipment, used computers to store information and documents, as well as

used and applied technology to the process of teaching and learning since the 1994

higher education reform. These findings are presented in Table 14.

Table 14

Frequency and Percentage of Information Technology

N=112 Question	Answer	Frequency	Percentage
8. Used computer to store information and documents?	Yes	100	100%
	No	0	0
9. Improved any computer hardware and software?	Yes	100	100%
	No	0	0
10. Adapted and applied technology in teaching and learning?	Yes	100	100%
	No	0	0
11. Used computer to increase productivity?	Yes	100	100%
	No	0	0

Facilities and Equipment

All the Physical Education Departments have improved their structural facilities, and added new sports equipment within the departments. The departments also have plans to build new sports centers or buildings with the budget provided by schools and MOE of Taiwan. These findings are presented in Table 15.

Table 15

Frequency and Percentage of Facilities and Equipment

N=112 Question	Answer	Frequency	Percentage
12. Improved structural facilities within the P.E. Dep.?	Yes	100	100%
	No	0	0
13. Added new sports equipment?	Yes	100	100%
	No	0	0
14. Have a plan or budget to build new sport centers?	Yes	100	100%
	No	0	0

Professional Development

All Physical Education Department chairs responded positively to the

expectation that they provide continuing education for teachers and improve their

teaching and administrative quality. The teachers in Physical Education Departments

have also published more research papers as a response to the 1994 education reform.

According to the responses in Table 16, 14% of schools in higher education

institutions have created new related departments or graduate schools of sports

recreation, sports management, or health management. All of the Physical Education

Departments, related departments, and graduate schools have increased the number of

teachers by hiring new teachers who have doctoral degrees, associate professor or

higher positions.

As a response to higher education reform, chairs reported teachers have

requested the opportunity to earn a higher degree. In addition, chairs reported these

teachers are presently requesting promotion to higher position as a result of earning

advanced degrees. These findings are presented in Table 16.

Table 16

Frequency and Percentage of Professional Development

N=112	Question	Answer	Frequency	Percentage
15.	Provided continuing education for teachers?	Yes	100	100%
		No	0	0
16.	Improved teaching and academic quality?	Yes	100	100%
		No	0	0
17.	Had more research papers published?	Yes	100	100%
		No	0	0
18.	Created new related department?	Yes	16	14%
		No	96	86%
19.	Increased the number of teachers?	Yes	100	100%
		No	0	0
20.	More teachers requested upgrade positing?	Yes	100	100%
		No	0	0
	Minimum 2	Maximum 11	Mean 6.4	SD=2
21.	Hire new teacher who are doctorate or professor?	Yes	96	86%
		No	16	14%
	Minimum 0	Maximum 5	Mean 1.5	SD=1

Management

Since the 1994 higher education reform, 100% of Physical Education

Departments have experienced more effective sports facility management policies and

more efficient administrative functioning as well as having more human resource

management within the departments. These findings are presented in Table 17.

Table 17

Frequency and Percentage of Management

N=112 Question	Answer	Frequency	Percentage
22. Have more effective sports facilities management?	Yes	100	100%
	No	0	0
23. Have more efficient administrative work?	Yes	100	100%
	No	0	0
24. Have human resource management?	Yes	100	100%
	No	0	0

Leadership

Physical Education Department chairs responded that they have higher vision

and goals since higher education reform. They reported that they meet often with

other school chairs to exchange information about leadership. All of the chairs

reported they have also strived to further their education, acquire new knowledge,

make progress, and create a more enthusiastic climate since 1994. These findings are

presented in Table 18.

Table 18

Frequency and Percentage of Leadership

N=112 Question	Answer	Frequency	Percentage
25. The department director has higher vision/goal?	Yes	100	100%
	No	0	0
26. The director exchange information about leadership?	Yes	100	100%
	No	0	0
27. The director continuously further education?	Yes	100	100%
	No	0	0

According to the responses in question 1, schools incorporated an average of 8.3 new courses into their curriculum since the beginning of educational reform. Physical Education Department chairs also reported their department had an average of 6.4 teachers who had gone on to obtain a higher degree or position. In addition, each department had hired another 1.5 teachers holding a doctor degree or professor position.

Organizational Operation as Related to Knowledge Management

The remainder of the questionnaire existed to examine the potential role Knowledge Management might have as a moderating variable with respect to varying degrees of organizational operation. However, this research found very few differences in the organization structure of Physical Education Departments responses to higher education reform. Therefore, Knowledge Management or any other moderating variable was not necessary to this analysis. Nevertheless, some preliminary analyzes of Knowledge Management were conducted and are briefly reported here with additional considerations of these data as reported in the Appendix.

The next 23 questions assessed the organization operation of Physical Education Department. These findings are presented in Table 19 and Table 20.

The six incomplete questionnaires had completed responses for questions C1-1 to C1-23. Therefore, the results in Table 19 and 20 were based on statistics from

118 questionnaires. The results by school are presented in Appendix B and C.

Table 19

Frequency and Percentage of How Organizational Operation (Question C1~C10)

Strongly Agree (SA)	Agree (A)	Neutral (N)	Disagree (D)	Strongly Disagree (SD)

N=118	SA	A	N	D	SD	Total
1. Frequently seeks, analyzes, and implements new knowledge	115 97%	3 3%	0	0	0	118
2. Keeps a complete record and establishes a system of managing, categorizing, and organizing knowledge.	114 97%	4 3%	0	0	0	118
3. Creates channels that will ease the knowledge-sharing process.	114 97%	4 3%	0	0	0	118
4. Evaluates the performance of staff based upon their willingness to share knowledge with others.	2 2%	43 36%	22 19%	44 37%	7 6%	118
5. Come to recognize his/her strength and weakness in personal expertise.	116 98%	2 2%	0	0	0	118
6. Seek to acquire more knowledge and willing nets to share knowledge and skills with others.	85 72%	32 27%	1 1%	0	0	118
7. Organize his/her knowledge systematically.	117 99%	1 1%	0	0	0	118
8. Strive to maintain value and usefulness of data and information.	117 99%	1 1%	0	0	0	118
9. Strive to be the innovator of new knowledge especially in his area of expertise.	117 99%	1 1%	0	0	0	118
10. Belief that knowledge that an individual has is a strength and important asset.	109 92%	9 8%	0	0	0	118

Table 20

Frequency and Percentage of How Organizational Operation (Question C11~C23)

1.Never (N)   2. Sometimes (S)   3.Often (O)   4.Frequently (F)   5. Always (A)

N=118	A	F	O	S	N	Total
11. Analyzes and describes the knowledge environment and evaluates the knowledge currently possessed.	114 97%	4 3%	0	0	0	118
12. Acquires new knowledge from resources other than the department itself.	53 45%	50 42%	13 11%	2 2%	0	118
13. Edits and organizes knowledge into handbooks to ease accrual and storage.	26 22%	51 43%	40 34%	1 1%	0	118
14. Assists instructors to find the knowledge.	60 51%	49 42%	8 7%	1 1%	0	118
15. Instructors use resources that the department has to solve problems.	61 52%	44 37%	13 11%	0	0	118
16. Creative, innovative, and make proposals to allow the advancement and accumulation of knowledge.	109 92%	8 7%	1 1%	0	0	118
17. Encourage continuing education so that staff makes learning a lifelong habit.	103 87%	14 12%	1 1%	0	0	118
18. Share the experience of an individual or a group with others and make knowledge available for public use.	102 86%	15 13%	1 1%	0	0	118
19. Encourages the communication of knowledge and establishes a reward system.	85 72%	8 7%	17 14%	8 7%	0	118
20. Staffs in the department have strong camaraderie and are willing to share knowledge with each other.	96 81%	19 16%	2 2%	1 1%	0	118
21. Holds seminars or training sessions to impart knowledge to others.	98 83%	19 16%	1 1%	0	0	118
22. Establishes an information system that eases the organization, communication, and use of knowledge.	114 97%	3 3%	1 1%	0	0	118
23. Creates various information databases to provide staff with the latest knowledge.	114 97%	3 3%	1 1%	0	0	118

A special finding worth noting is that in Question 4, 38% of the chairs agreed while 43% disagreed that the department evaluates the performance of its staff based upon their willingness to share knowledge with others. The results of this question reflected two divided opinions. Regarding the Question 4, in Question 19, 79% of chairs said they frequently encourage communication of knowledge to the external world and established a reward system for knowledge sharing, while 21% said they less often promoted communication of knowledge to the external world and did not establish a reward system for knowledge sharing.

The responses to the Knowledge Management portion were subjected to factor analysis, which reduced the 23 questions to six factors. The questions comprising each of the six factors and a characterization of each factor, named as a result of this research is reported in Table 21.

Table 21

Six Dimensions About Organizational Operation

	Name of Dimension	Question Group
Factor 1	Knowledge Innovation and Integration	Questions 6,7,8,9,11
Factor 2	Knowledge Transmission and Utilization	Questions 21,22,23
Factor 3	Knowledge Sharing	Questions 19,20
Factor 4	Knowledge Accumulation of Acquisition	Questions 12,14,16,17,18
Factor 5	Knowledge Assessment	Question no.4.5.14
Factor 6	Knowledge Assembly	Question no.13.15

Knowledge Management Characteristics as Predictors of Differentiated Domains

The analysis of data indicated the possibility of conducting an *a posteriori*

comparison of sub scores of the differing Knowledge Management responses and the

differing Organizational Structure. Within the Knowledge Management questionnaire,

Question 4 (Evaluates the performance of staff based upon their willingness to share

knowledge with others.) and Question 19 (Encourages the communication of

knowledge and establishes a reward system.) had the greatest discrimination in

responses.

The organizational structure portion of the questionnaire had relatively

substantial discrimination in Question 8 (Strive to maintain value and usefulness of

data and information.). Discriminate function analysis was utilized to determine what

predictive relationship, if any, existed among the differentiated responses between the

questions. There was no experimentally important predictability or experimental

consistency found between any of the comparisons.

Summary

This chapter presented the data collected through a quantitative survey of the

current status of higher education institutions Taiwanese Physical Education

Departments in order to determine the degree of organizational improvement that has

occurred since the mandated national education reform. The total number of

completed questionnaires returned was 112; therefore, the effective response rate was

75%. The statistical analyses of the data indicates that Physical Education

Departments have reached a high level of compliance with the mandates and goals of

Taiwanese higher educational reform. With few exceptions, the Physical Education

Departments have met the expectations of higher education reform and may be

characterized as having achieved approximately 98% of the goals directed to them by

the MOE. The deviation from the national goals was found in the lack of adding new,

related departments. This directive is not mandatory and has been met by 14% of the

participants in this research

Within the Knowledge Management questionnaire, this research found very

few differences in the organization structure of Physical Education Departments with

respect to higher education reform mandates. Therefore, Knowledge Management or

any other moderating variable was not necessary to this analysis.

CHAPTER FIVE

DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

Profile of Study

The purpose of this study was to investigate the current status of higher education institutions Taiwanese Physical Education Departments in order to determine the degree of organizational improvement, if any, that has occurred since the mandated national education reform.

Based on University Law, it was expected that universities would restructure their resources more effectively in all departments to further the development of higher education. The University Law provides an overall structure but offers universities the freedom to make decisions regarding academics and teaching, which allows each school to determine its individual culture.

In Taiwan, Physical Education Departments have historically been a second-level administrative department under the Department of Student Affairs in institutions of higher education. The organizational function of the Physical Education Departments is to offer physical education courses as well as provide for the administration and maintenance of all sporting facilities.

According to the new University Law, universities have the autonomous right to internal organization. Since 1994, universities have had the right to decide whether

the Physical Education Department should become an independent department. Consequently, most universities have moved the Physical Educational Departments to a first administrative level so that the department can take on more responsibility and better manage the money budgeted for its programs.

The University Law has led universities to make the Physical Education Department independent from the Department of Student Affairs and move it to the first administrative level. In 1994, physical education, which had been a required four-year program in four-year colleges and universities, changed from a course being required for four years to an elective for most students beyond the first year of college or university.

Within the environment of education and administrative policy changes, the new reforms have required the administrators of physical education not only to continue to manage courses and facilities, but also to make the changes in the physical education curriculum that better meet the needs of students' receiving a more comprehensive education. Physical Education Departments of higher education institutions in Taiwan must implement strategies for improvement and innovative organizational development, in order to lead such organizations into the future.

Methods Employed

The investigation was conducted using quantitative methodology. Questionnaires were utilized to determine the degree to which Physical Education Departments have successfully addressed the mandated organizational change. The survey was sent to 150 chairs of Physical Education Department in all public and private non-religions higher education institutions in Taiwan who were requested to complete the survey instrument. There were 112 completed surveys received; therefore, the effective response rate was 75%. From this survey, data were gathered to answer the questions posed by the study.

Research Question

The research question for this study was to determine the degree to which Physical Education Departments have made organizational improvements consistent with the Taiwan MOE expectations for educational reform in institutions of higher education in Taiwan.

As reported by the appropriate chairs, Physical Education Departments have made exemplary progress toward meeting the mandates and goals of Taiwanese higher educational reform. With few exceptions, the Physical Education Departments have met the expectations of higher education reform and may be characterized as having achieved approximately 98% of the goals directed to them by the MOE. The

deviation from the national goals was found in the lack of adding new, related

departments. This directive is not mandatory and has been met by 14% of the

participants in this research.

<div align="center">Null Hypothesis</div>

For this research, the null hypothesis stated there would be no experimentally

important or experimentally consistent predictability of organization improvement of

Physical Education Departments, by domain, utilizing Knowledge Management

scores as the predictor variable.

The primary finding with respect to this hypothesis was that Physical

Education Departments have universally met the expectations of Taiwan higher

education reform; therefore, there were no varying levels of organizational

improvement. That is, Physical Education Departments were found to have

reorganized in such a way that they had met their organizational goals at the strongest

level thereby not allowing for a possible analysis of differentiated organizational

improvement.

The second finding relative to the null hypothesis was the equally common

practice of utilizing Knowledge Management within each Physical Education

Department. This variable also did not admit to variation and so the statistical analysis

investigating the possibility that Knowledge Management may be a predictor variable

relative to differing degrees of organizational improvement was not possible. As a result, there was a failure to reject the null hypothesis and it was not possible to form any definitive conclusion regarding the relationship between Knowledge Management and organizational improvement.

Analysis of the Seven Domains of Physical Education Department

Organizational Structure

For this research, organizational structure was evaluated by analyzing its seven domains. The overall conclusion was that the Physical Education Departments have all made organizational improvements consistent with the MOE expectations for educational reform. The evaluation of organizational structure by department chairs also was examined by specific domains and resulted in the following conclusions regarding each domain:

Curriculum

All of the institutions reported advancements in the design and planning of physical education curricula within their departments. The results also showed an average addition of 8.3 new physical education courses and respective evaluations conducted by each school found students to be highly satisfied with physical education courses they took. Addition of new physical education courses combined

with a high satisfaction level was successfully used to attract students to enroll in physical education courses.

Service

After the Physical Education Departments were upgraded to the first administrative level, the departments provided more services both on and off campus. Such services included provision of free sports training to student athletes by faculties in after-school hours and physical fitness training and assessment. The departments also allowed the free use of its sports facilities to residents in the community in the morning and in the evening and provided free physical fitness assessment to community residents.

The service factor was a comprehensive reform requiring leadership combined vision and strategy for operating and managing sports facilities in the Physical Education Departments. The director considered internal and external use of the facilities and combined physical education with community activities that would most effectively meet community needs.

Information Technology (IT)

All the Physical Education Departments chairs reported that their departments utilized information technology to a high degree as a result of higher education reform. In order to keep up with the technological advantages offered to education,

both computer software and hardware used in offices and classrooms have been

increased and improved, and computers are widely utilized in the teaching and

learning process. There is an emphasis for each member in the Physical Education

Departments to increase their use of information technology and acquire new

technological knowledge and skills in order to improve academic achievement for the

departments and their students.

Facilities and Equipment

After physical education departments were promoted to the first administrative

level, more information storage was required by the departments. As a result, schools

have increased the space of their office within the physical education department in

order to accommodate additional technology. The departments also purchased more

up-to-date teaching tools and equipment and built sports centers to accommodate

increased numbers of physical education courses and students.

Professional Development

Physical Education Departments provided numerous opportunities for

continuing education to encourage teachers to acquire higher levels of professional

expertise and knowledge. In addition, some schools allow both paid and unpaid leave

to encourage teachers to further their education overseas so that they can obtain a

higher position and become a better educator. Teachers also can attain promotion if they publish research articles in journals.

There were 14% of the schools that established new related departments and/or graduate schools in sports recreation and health management. To accommodate the increased need for teaching staff, Physical Education Departments hired an average of 1.5 new teachers who hold a doctorate degrees or professor positions. Physical Education Departments have recognized the importance of enhancing their teaching quality by increasing the number of faculty members and staff with educators having doctorate degrees and/or advanced positions.

Management

In order to more efficiently manage an increased number of sports facilities, Physical Education Departments implemented many management policies and designated staff to be in charge of managing each sports facility. Computer technology was also employed to enhance the efficacy of administration and human resource management. Furthermore, effective human resource management, which includes allocation of human resources and organized tasks and responsibilities, was also an important consideration factor for the managing the Physical Education Departments.

Leadership

Following Taiwan higher education reform, the chairs of Physical Education

Departments report they have a higher visions and goals, and meet often with other

school chairs to exchange information about leadership concepts. They also furthered

their education, acquired new knowledge, and created a more enthusiastic climate

within the departments.

Leadership is important in human interaction, especially working with people

effectively, because people are always the central part of an organization. Leadership

develops from interaction between a leader and the followers through their situation in

an organization. These interactions include sharing the vision and values, stimulating

development of followers and helping the organization improve the situation. Better

organization performances occur when the followers have a good interaction with

their leader. This good interaction could impact the organizational effectiveness of

both leaders and followers. The organizational leader is a crucial link in an

organization.

Analysis of the Organizational Operation as Related to

Knowledge Management

Based upon the Knowledge Management questions, the responses to the

Knowledge Management portion were subjected to factor analysis. This study

reduced the 23 questions to six factors. These factors have been named by the researcher as follows:

1. Knowledge: Accumulation of Acquisition

2. Knowledge: Assembly

3. Knowledge: Assessment

4. Knowledge: Sharing

5. Knowledge: Transmission and Utilization

6. Knowledge: Innovation and Integration

All of the schools provided similar responses in the six factors mentioned above with the exception of the responses to Question 4, where the respondents were strongly divided regarding the evaluation of the performance of staff based upon their willingness to share knowledge with others, and responses to Question 19 indicated about one chair in five did not encourage the communication of knowledge and did not establish a reward system.

Based upon the responses of the department chairs, this research found very few differences in organizational structure among Physical Education Departments were found. Therefore, the invariant organization structure of Physical Education Department nullified correlative analysis using demographic variables and/or Knowledge Management as predictive variables.

Conclusions

The findings of this research concludes, based upon the perspective of

department chairs, that Physical Education Departments in Taiwan have aggressively

adopted and implemented virtually all of the appropriate governmental educational

reforms that were recommended and/or mandated in 1994. These reform measures

were, in a large part, directed to Physical Education Departments in a manner that

offered the departmental leadership an opportunity to increase their level of

responsibility while at the same time, requiring a higher level of leadership to

reorganize departments or face elimination from higher education. These mandates

were both an opportunity and a challenge in that physical education would maintain a

presence in higher education only to the degree to which its leadership would reform

the program and emerge with a stronger curricula, a better educated faculty, and an

increased service, both on and off campus. The Taiwanese government wisely

provided the department chairs so willing to meet this challenge with an increased

level of leadership capable of making these reforms.

This research reflects that the opportunity was seized and the challenge met.

Physical Education Departments have made level one changes, added more faculty

having doctorate degrees, added an average of 8.3 new classes, utilized information

technology and Knowledge Management, increased professional development for

faculty, and broadened leadership visions and goals to name some of the

commendable improvements. While these mandates initially may have been viewed

as the demise of physical education in the higher education curricula, owing to the

status change of physical education classes from required to elective, has instead

resulted in serving more people with a much better program. This is the goal of all

educational reform and not only have Physical Education Department chairs indicated

they have met this goal, but their leadership roles may be found to be useful as models

of how the challenges of educational reform can be transformed into a better,

stronger, more productive, and effective outcome.

The final conclusion to be drawn from this research is the consistent presence

of Knowledge Management within the successful leadership practices of all

department chairs participating in this research suggests that Knowledge Management

may be an important tool for leadership that is engaged in organizational change.

While this conclusion is not definitive due to the nature of the findings, it is notable

that Knowledge Management was universally utilized as one tool for implementing

change by these department chairs at the highest level of change, that is, reformation.

Any model of organizational change should investigate the possibility of

incorporating Knowledge Management as a component of the leadership role

employed by the model to effect that change.

Recommendations

The primary goal of Physical Education Departments is to provide students

with the knowledge and consequent habits proper to and appropriate for good health.

Physical education focuses on the physical development and health needs of students

and as an educational process that increased people's knowledge and affected

people's participation in exercise, sports, games, and outdoor-adventure activities, and

their attitudes toward them.

Educational reform in Taiwanese higher education was directed toward this

same end with the intent to comprehensively improve the form by which this goal was

to be met. This research sought to determine the degree to which this improvement

may have been realized by examining the post reform organizational structure and

programs in Physical Education Departments through the perspective of their

department level leadership. The following recommendations are offered with respect

to the purpose of this research.

Ministry of Education

Since Taiwan higher education reform of 1994, the Ministry of Education

provides each school with more freedom in the areas of academics and teaching,

allowing schools and departments to create their own climate and culture (MOE,

1994). This allowed Physical Education Departments the advantage of being

promoted to the first-administrative level. Schools were also empowered to determine individual policies and curricula in order to meet a new restructured status of physical education such as the change from mandatory to elective classes.

This research commends the Ministry of Education for providing the possibility for a new level of leadership in order to actualize the possibility for Physical Education Department chairs to form new organizational structures that promote educational improvement. These findings suggest that the leadership in the Physical Education Departments were able to direct their departments in such a way that class offerings increased, more students have enrolled, and greater community service has resulted.

The Physical Education Departments have substantially improved their programs as a result of educational reform and the leadership necessary to effect that reform. Consequently, the Physical Education Departments represent a very successful leadership model should be made available for any departments that may be having difficulty meeting the Ministry of Education's educational reform expectations. The leadership within the Physical Education Departments has, in the best of Chinese culture, met challenge with success and this success should be made available where appropriate.

Physical Education Department Chairs

Although many different chairs had assumed control of Physical Education

Departments in the ten years after the higher education reform, Physical Education

Departments' goal of continuous improvement appears to have never changed.

Therefore, it is of utmost importance that Physical Education Department chairs

maintain their positive leadership roles with respect to higher education reform and

departmental improvement.

Under their leadership, the staff of Physical Education Departments can

continue to work together as a cohesive unit to continue improving their education

and service. This research commends Physical Education Department chairs in

Taiwan higher education for successfully seizing the opportunity to form new

organization structures that have provided substantial education improvement.

Implications for Further Research

Further research is suggested that would evaluate students' perspective

regarding physical education curriculum and student satisfaction. In addition, similar

research could be conducted that analyzes teacher perspective and contrasted those

findings with the perspective of department chairs found in this research.

This research should be extended to other departments of higher education,

particularly departments not having as consequential mandates as the Physical

Education Departments experienced. Such departments may not have had the internal

motivation to restructure and therefore have yet to make appropriate improvements as

designed by educational reform. If these circumstances exist, such departments would

benefit from being identified and provided assistance with meeting higher education

reform goals and expectations.

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APPENDICES: A

Cover Letter to Potential Subjects

APPENDIX A: Cover Letter to Potential Subjects

The Organizational Response of Physical Education Department to Level One Change
Mandated by Taiwan Higher Education Reform
The University of Montana

Dear Physical Education Department Director:

My name is Ting-Yi Christine Luo, a doctoral candidate in the Department of
Educational Leadership at The University of Montana. As part of my dissertation
research, I am conducting a survey of the organizational response of Physical
Education Departments to the Level one change mandated by Taiwan higher
education reform. The University of Montana Institutional Review Board has
approved the protocols to be used in my research, for the protection of Human
Subjects *(Pending actual approval).*

This letter is to invite you to participate in the study. All participants in this
research will not be identified in any way. You are not obligated to participate in the
study. Your future status in your department will not be affected regardless of whether
or not you choose to take part or to stop at any time. If you choose to participate,
please complete and return the enclosed survey in the self-addressed stamped
envelope as soon as possible. Please do not put your name or the name of your school
on any of the materials that you return.

All the information you provide will be reported in aggregate form so that it
will not be possible to identify the names of participants, Physical Education
Departments and/or schools. You are welcome to direct any questions you may have
to me at any time. Please do not hesitate to contact me too if you wish to report a
problem that is related to the study.

The success of the study depends upon your kind cooperation and voluntary
participation. I appreciate the time and effort you take to complete and return the
survey to me before July 31, 2004.

Thank you in advance for your cooperation and support.

Yours sincerely,

Ting-Yi Christine Luo
lazycat111.tw@yahoo.com.tw

APPENDICES: B

Analysis of Physical Education Department Statues in Seven Domains

APPENDIX B:

Analysis of Physical Education Department Statues in Seven Domains

N=112	Domain	Yes	No	Mean
1. Increased or decrease new P.E. courses?	Curriculum	100%		8.3
2. Has designed small P.E. classes?	Curriculum	100%		
3. Have more students electing P.E. course	Curriculum	100%		
4. Students satisfied P.E. courses?	Curriculum	100%		
5. P.E. department offer new services to school?	Service	100%		
6. P.E. department offer new services to community?	Service	100%		
7. Provided sports facilities to community	Service	100%		
8. Used computer to store information and documents?	I.T.	100%		
9. Improved any computer hardware and software?	I.T.	100%		
10. Adapted and applied technology in teaching and learning?	I.T. Pro. Dev.	100%		
11. Used computer to increase productivity?	I.T.	100%		
12. Improved structural facilities within the P.E. Dep.?	Facilities	100%		
13. Added new sports equipment?	Facilities	100%		
14. Have a plan or budget to build new sport centers?	Facilities	100%		
15. Provided continuing education for teachers?	Pro. Dev.	100%		
16. Improved teaching and academic quality?	Pro. Dev	100%		
17. Had more research papers published?	Pro. Dev	100%		
18. Created new related department?	Pro. Dev	14%	86%	
19. Increased the number of teachers?	Pro. Dev.	100%		
20. More teachers requested upgrade positing?	Pro. Dev.	100%		6.4
21. Hire new teacher who are doctorate or professor?	Pro. Dev	100%		1.5
22. Had more effective sports facilities management?	Manage.	100%		
23. Had more efficient administrative work?	Manage.	100%		
24. Have human resource management?	Manage.	100%		
25. The department director has higher vision/goal?	Leadership	100%		
26. The director exchange information about leadership?	Leadership	100%		
27. The director continuously further education?	Leadership	100%		

APPENDICES: C

The Average Score in Each School in Organizational Operation

APPENDIX C:

The Average Score in Each School in Organizational Operation (N=118)

School	C1-C10	C11-C23	Total	Average	School	C1-C10	C11-C23	Total	Average
1	47	61	108	4.7	31	49	61	110	4.8
2	47	61	108	4.7	32	48	54	102	4.4
3	44	62	106	4.6	33	49	62	111	4.8
4	47	62	109	4.7	34	49	63	112	4.9
5	47	59	106	4.6	35	46	62	108	4.7
6	47	63	110	4.8	36	47	58	105	4.6
7	47	60	107	4.7	37	48	59	107	4.7
8	48	61	109	4.7	38	46	61	107	4.7
9	48	62	110	4.8	39	49	59	108	4.7
10	47	60	107	4.7	40	48	57	105	4.6
11	47	62	109	4.7	41	49	59	108	4.7
12	46	63	109	4.7	42	49	60	109	4.7
13	46	60	106	4.6	43	49	62	111	4.8
14	46	61	107	4.7	44	49	60	109	4.7
15	45	63	108	4.7	45	49	62	111	4.8
16	47	65	112	4.9	46	48	63	111	4.8
17	46	57	103	4.5	47	47	61	108	4.7
18	46	58	104	4.5	48	47	62	109	4.7
19	47	57	104	4.5	49	47	61	108	4.7
20	46	61	107	4.7	50	47	61	108	4.7
21	46	55	101	4.4	51	47	62	109	4.7
22	46	61	107	4.7	52	47	60	107	4.7
23	46	56	102	4.4	53	47	64	111	4.8
24	46	62	108	4.7	54	48	59	107	4.7
25	46	62	108	4.7	55	48	64	112	4.9
26	47	62	109	4.7	56	47	65	112	4.9
27	47	63	110	4.8	57	45	56	101	4.4
28	48	61	109	4.7	58	47	63	110	4.8
29	47	61	108	4.7	59	48	62	110	4.8
30	48	60	108	4.7	60	47	62	109	4.7

School	C1-C10	C11-C23	Total	Average
61	45	64	109	4.7
62	47	61	108	4.7
63	45	62	107	4.7
64	46	61	107	4.7
65	47	61	108	4.7
66	47	63	110	4.8
67	47	65	112	4.9
68	48	63	111	4.8
69	46	63	109	4.7
70	49	56	105	4.6
71	48	62	110	4.8
72	48	63	111	4.8
73	49	62	111	4.8
74	49	62	111	4.8
75	49	62	111	4.8
76	48	61	109	4.7
77	47	62	109	4.7
78	49	58	107	4.7
79	48	62	110	4.8
80	48	61	109	4.7
81	50	64	114	5.0
82	47	61	108	4.7
83	46	60	106	4.6
84	47	63	110	4.8
85	48	62	110	4.8
86	49	63	112	4.9
87	49	62	111	4.8
88	49	57	106	4.6
89	48	63	111	4.8
90	49	60	109	4.7

School	C1-C10	C11-C23	Total	Average
91	48	60	108	4.7
92	49	62	111	4.8
93	49	62	111	4.8
94	48	62	110	4.8
95	49	61	110	4.8
96	49	64	113	4.9
97	49	64	113	4.9
98	49	63	112	4.9
99	49	56	105	4.6
100	49	59	108	4.7
101	49	62	111	4.8
102	49	65	114	5.0
103	47	65	112	4.9
104	47	65	112	4.9
105	47	61	108	4.7
106	49	63	112	4.9
107	49	64	113	4.9
108	48	62	110	4.8
109	49	54	103	4.5
110	49	64	113	4.9
111	49	55	104	4.5
112	49	55	104	4.5
113	40	52	92	4.0
114	44	40	84	3.7
115	44	48	92	4.0
116	43	53	96	4.2
117	46	59	105	4.6
118	48	52	100	4.3
Average	**47.4**	**60.0**	**108**	**4.7**

APPENDICES: D

Knowledge Management Factor Analysis Motivating Factor

APPENDIX D:

Knowledge Management Factor Analysis Motivating Factor

The analyses showed that in the most important motivating factor for the

Physical Education Department to implement Knowledge Management. There are

51% of the departments promoted Knowledge Management to increase management

efficiency. The findings are presented in Table22.

Table 22

Frequency and Percentage of Motivating Factors to Implement Knowledge

Management

N=112	Frequency	Percentage	Valid Percent	Cumulative Percent
1. Increase management efficiency	57	51%	50.9	50.9
2 Increase work efficiency	24	21%	21.4	72.3
3 Increase the asset of knowledge	21	19%	18.8	91.1
4 To improve staff learning	7	6%	6.3	97.4
5 Following the trend	3	3%	2.7	100
Total	112	100%	100%	
Minimum Years 1 Maximum Years 28 Average Years 12.1 SD=6.9				

Obstacle to Overcome

In the increasing order, the difficulties that Physical Education Departments

may face in the effort to implement knowledge management are: insufficient

knowledge about knowledge management (15%), inadequate planning skills (16%),

and difficulty of outcome assessment (22%).

Table 23

Frequency and Percentage of The possible obstacles has to overcome

	Frequency	Percent	Responses Cases
1.Lack of understanding of Knowledge Management	69	*15%	61.6
2. Lack of confidence from staff and instructors	30	7%	26.8
3. Lack of co-operation from staff	40	9%	35.7
4. High expenses	65	14%	58
5. Insufficient human resources	28	6%	25
6. Lack of planning ability	73	*16%	65.2
7. Inability to assess final outcome	97	*22%	86.6
8. Unsuitable information systems	49	11%	43.8
Total Responses	451	100	402.7

How to Implement Knowledge Management

There were 92 of the schools would implement Knowledge Management by

themselves, 12 of the schools would seek advice from educational institutions, and

only 8 schools would seek help from professional consulting agencies. These findings

are presented in Table 24.

Table 24

Frequency and Percentage of Implement Knowledge Management

N=112		Frequency	Percentage	Valid Percent	Cumulative Percent
1.	By itself	92	82%	82.1	82.1
2.	Seek Help form professional consulting agencies	8	7%	7.1	89.3
3.	Seek help form educational institutions	12	11%	10.7	100
	Total	112	100%	100%	

Knowledge Management in Daily Activities

All schools acknowledged that they integrated knowledge management in the

daily activities of their physical education departments, such activities include quality

assurance (ISO-9000, 2000), short and long term plans of the Physical Education

Department, meetings, internal seminars, and case studies. These findings are

presented in Table 25.

Table 25

Frequency and Percentage of Knowledge Management in the P.E. Department daily

activities

N=112		Answer	Frequency	Percentage
1.	ISO-9000, 2000	Yes	100	100%
		No	0	0
2.	Establishment of short and	Yes	100	100%
	long term plans	No	0	0
3.	Internal seminars, meetings,	Yes	100	100%
	and case studies	No	0	0
	Total			

APPENDICES: E

Questionnaires of the Organizational Response of Physical Education Departments to

Level One Change Mandated by Taiwan Higher Education Reform

The Organizational Response of Physical Education Department to Level One Change
Mandated by Taiwan Higher Education Reform   (Questionnaire)

Part I Personal information

a. School information

What type of institution your school is?

☐ 1. University   ☐ 2. Normal College or University

☐ 3. Technological University   ☐ 4. Vocational Institution

☐ 5. Management College   ☐ 6. Military School

☐ 7. Junior College

b. Biographic information

1.Age ： _____

2. Sex ： ☐ Male   ☐Female

3. Educational level ： ☐High school   ☐ Junior College   ☐Bachelor's

☐Master's   ☐Doctorate

4. What is your position?

☐a. Professor   ☐b. Associate professor   ☐c. Assistant professor   ☐e. Lecturer

5. Have you had any education in knowledge management?   ☐Yes   ☐No

If yes, how much time? _____

6. How long have you been teaching at your current institution? Years _____ Months_____

7. How long have you been serving as the Chair of the Department of Physical Education?

Years _____ Months_____

Part II. Physical Education Department Status.

1. Since 1994 Taiwan higher education reform, has your department ☐increased or ☐decreased new physical education courses ? By how many____?

2. Has your department designed small classes to promote exercise as a habit as a result of the 1994 higher education reform? Yes☐   No☐

3. Does your school have more students electing to take physical education curricula as a result of the 1994 higher education reform? Yes☐   No☐

4. According to your department's evaluations: Have your students been satisfied with physical education activity courses offered as a result of the 1994 higher education reform? Yes☐ No☐

5. Does your department offer new services to your school as a result of the 1994 higher education reform? Yes☐   No☐

6. Does your department offer new service to your community as a result of the 1994 higher education reform? Yes☐   No☐

7. Has your department provided sports facilities to users and services to the community as a result of the 1994 higher education reform?   Yes☐   No☐

8. Has your department used computer to store information and documents as a result of the 1994 higher

education reform?   Yes☐   No☐

9.   Has your department improved any computer hardware and software as a result of the 1994 higher education reform?   Yes☐   No☐

10.   Has your department adapted, used and applied technology to teaching and learning as a result of the 1994 higher education reform?   Yes☐   No☐

11.   Has your department used computer to increase productivity as a result of the 1994 higher education reform?   Yes☐   No☐

12.   Has your department improved its structural facilities within the department as a result of the 1994 higher education reform?   Yes☐   No☐

13.   Has your department added new sports equipment as a result of the 1994 higher education reform?
       Yes☐   No☐

14.   Does your department have a plan or budget to build new sport centers as a result of the 1994 higher education reform?   Yes☐   No☐

15.   Has your department provided continuing education for teachers as a result of the 1994 higher education reform?   Yes☐   No☐

16.   Has your department improved teaching and academic quality as a result of the 1994 higher education reform?   Yes☐   No☐

17.   Has your department had more research papers published as a result of the 1994 higher education reform?   Yes☐   No☐

18.   Has your school created new related departments of sports recreation, or sports management, or health management as a result of the 1994 higher education reform?
       Yes☐   No☐

19.   Has your department increased the number of teachers as a result of the 1994 higher education reform?
       Yes☐   No☐   If yes, please specify the number: _____

20.   Have more teachers requested higher degrees or an upgrade to a higher position as a result of the 1994 higher education reform?   Yes☐   No☐
       If yes, how many teachers got higher degrees or upgrades to higher positions? _____

21.   Has your department hired new teachers who have doctoral degrees or who have professor positions as a result of the 1994 higher education reform?   Yes☐   No☐
       If yes, please specify the number._____

22.   Has your department had more effective sports facilities management policies as a result of the 1994 higher education reform?   Yes☐   No☐

23.   Has your department had more efficient administrative work as a result of the 1994 higher education reform?   Yes☐   No☐

24.   Does your department have human resource management as a result of the 1994 higher education reform?   Yes☐   No☐

25.   Does your department director have a higher vision/goal as a result of the 1994 reform?
       Yes☐   No☐

26.   As a result of the 1994 higher education reform, has your department director met often with other school directors to exchange information about leadership?   Yes☐   No☐

27. Does your department director continuously further education, acquire new knowledge, make progress, influence member and create a more enthusiastic climate as a result of the 1994 higher education reform?   Yes☐   No☐

Part Ⅲ. About Organizational operation

| Strongly Agree (SA) | Agree (A) | Neutral (N) | Disagree (D) | Strongly Disagree (SD) |

1. What is your opinion on how organizational operation in the Department of Physical Education?

	SA	A	N	D	SD
1. The department frequently seeks, analyzes, and implements new knowledge as appropriate.	☐	☐	☐	☐	☐
2. The department keeps a complete record of its various activities and establishes an effective system of managing, categorizing, and organizing knowledge.	☐	☐	☐	☐	☐
3. The department creates channels that will ease the knowledge-sharing process.	☐	☐	☐	☐	☐
4. The department evaluates the performance of its staff based upon their willingness to share knowledge with others.	☐	☐	☐	☐	☐
5. Come to recognize his/her strength and weakness in personal area of expertise.	☐	☐	☐	☐	☐

	SA	A	N	D	SD
6. Seek to acquire more knowledge especially in the area where insufficiency exists and are willing to share knowledge and skills with others.	☐	☐	☐	☐	☐
7. Organize his/her knowledge systematically.	☐	☐	☐	☐	☐
8. Strive to protect various data and information of professional knowledge.	☐	☐	☐	☐	☐
9. Strive to be the innovator of new knowledge especially in his area of expertise.	☐	☐	☐	☐	☐
10. Knowledge that an individual has is a strength and important asset.	☐	☐	☐	☐	☐

| 1.Never (N) | 2. Sometimes (S) | 3.Often (O) | 4.Usually (U) | 5. Always (A) |

	N	S	O	U	A
11. Your department analyzes and describes its knowledge environment and evaluates whether or not the knowledge it currently possesses is sufficient.	☐	☐	☐	☐	☐
12. Your department acquires new knowledge from a fair amount of sources other than the department itself.	☐	☐	☐	☐	☐
13. Your department edits and organizes its knowledge into handbooks to ease accrual and storage.	☐	☐	☐	☐	☐

1.Never (N)	2. Sometimes (S)	3.Often (O)	4.Usually (U)	5. Always (A)

	N	S	O	U	A
14. Your department assists its instructors to find the knowledge and skills they need.	☐	☐	☐	☐	☐
15. The instructors in your department use resources that the department has to solve problems.	☐	☐	☐	☐	☐
16. Your department encourages its staff to be creative and innovative and make proposals to allow the advancement and accumulation of knowledge.	☐	☐	☐	☐	☐
17. Your department encourage continuing education so that its staff makes learning a lifelong habit.	☐	☐	☐	☐	☐
18. Your department share the experience of an individual or a group with others within the department and make its knowledge available for public use.	☐	☐	☐	☐	☐
19. Your department encourages the communication of knowledge to the external world and establishes a reward system for knowledge sharing.	☐	☐	☐	☐	☐
20. The staff in your department have strong camaraderie and are willing to share knowledge with each other.	☐	☐	☐	☐	☐
21. Your department holds seminars or training sessions to impart knowledge to others.	☐	☐	☐	☐	☐
22. Your department takes an active role to establish an information system that ease the organization, communication, and use of knowledge.	☐	☐	☐	☐	☐
23. Your department creates various information databases to provide its staff with the latest knowledge.	☐	☐	☐	☐	☐

2. What is the most important motivating factor for your department to implement Knowledge Management? (Choose ONE answer)

☐ 1. To increase work efficiency   ☐ 2. Following the trend

☐ 3. To increase the asset of knowledge   ☐ 4. To improve staff learning

☐ 5. To increase management efficiency   ☐ 6. Others (please specify:)_____.

3. What are the possible obstacles that your department has to overcome? (Choose more than one if necessary)

☐ 1. Lack of understanding of Knowledge Management

☐ 2. Lack of confidence from staff and instructors

☐ 3. Lack of co-operation from staff   ☐ 4. High expenses

☐ 5. Insufficient human resources   ☐ 6. Lack of planning ability

☐ 7. Inability to assess final outcome   ☐ 8. Unsuitable information systems

☐ 9. Others (please specify:)_____

4. How does your department implement Knowledge Management?

☐ 1. By itself   ☐ 2. Seek help from professional consulting agencies

☐ 3. Seek help from educational institutions   ☐ 4. Others (please specify)_____

5. Integration Knowledge Management in the daily activities of your department?

a). Quality Assurance (ISO-9000, 2000)   Yes.☐   No.☐

b). Establishment of short and long term plans of the P.E. department.   Yes.☐   No.☐

c). P.E. Department meetings on duties and tasks of the department, internal

     seminars, and case studies of Physical Education   Yes.☐   No.☐