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**THE THIRD TRANSFORMATION OF AMERICAN
EDUCATION**

by

Randolph D. J. Ortiz

FINAL PROJECT SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF ARTS IN LIBERAL STUDIES

SKIDMORE COLLEGE

May 1996

Advisors: Sheldon Solomon, Phil Hardy

ACKNOWLEDGEMENTS

I would like to take a moment to thank Dr. Melvin Reichler of the Sociology Department of Queens College of The City University of New York, for his constant intellectual and emotional support and guidance throughout the last eight years. I am a fortunate indeed to have Mel as a friend and mentor. Not only does he provide intellectual stimulation, direction, opportunity, and challenge, but when needed, he provides a firm hand, and a sympathetic ear. Besides, he knows where all the good Chinese Restaurants are! Thanx Mel.

I would also like to thank Dr. Sophia Demetriou, Director of Cooperative Education and Internships at Queens College, for the opportunity to teach in the department, where I learned volumes on cooperative education and college administration. Sophia's willingness and enthusiasm to share her extensive knowledge in experiential education was key to the construction of several points in this paper. I would also like to thank her for inviting me to participate, as equal partner, in the development of the *Integrated Learning System* (see chapter VI) which I believe will set a benchmark for the future experiential learning. Sophia has also provided friendship, support and "grammar checking" during stressful periods.

Next on the list is Dr. Basil Browne, who always has the time to share good intellectual conversation (even on Saturday mornings), an objective ear to bounce ideas off of, and a hardy laugh. "Learn the theory, then develop it, or push against it!"

I must also thank sociology lab research assistants Jason Benson and Kim Knopf, for helping me create graphs on Saturdays.

Thanks also go to my Skidmore advisors: Professors Sheldon Solomon and Phil Hardy, for letting me do my thing.

Finally, a special thank you to Dr. Larry Reis, Director of the M.A.L.S. program at Skidmore College for keeping the faith, when others didn't.

May, 1996

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INTRODUCTION

Most social scientists recognize the **social system** as the framework by which society, as a whole, operates. That framework has, as its major components, sub-systems known as institutions, which perform the functions necessary for the survival and proliferation of the social system. One of the **master institutions** *Education*, is the focus of this paper. Today, it is generally accepted and expected, that education should own the responsibility for the socialization of youth. This includes preparation of young citizens for productive participation in the social system. But what does that mean; and what are the implications of change on its ability to fulfill its mission?

This paper is an interdisciplinary analysis of the American educational process, and an assertion of what the institution of education might do to remain an effectively functioning component in the greater social system.

As an interdisciplinary study, the following document offers a presentation of classical and contemporary functionalist sociological theory, so as to analyze the nature of the relationship between education and society. Further the "Theoretical Perspective" offers a framework for understanding the impact of social change on parts of the system, and the implications of that change on the rest of the system. In other words, how do the other system parts react to a change in a specified part; or how do parts A, B, and C react to a change in part D?

The "Historical Perspective" is offered as the second foundational component of this study. This provides the reader with an understanding of the different types or classes of

education. Also presented is an overview of the institution's past changes as responses to changes in the social system. Further understanding will suggest a set of recurring pattern behaviors by society, and subsequently, education institutions. Recognition of these patterns of action will allow one to identify similar circumstances occurring at the present time, and to predict what might be termed "inevitable outcomes" with respect to the need of education to respond to the social system's need.

This inevitable response, which this paper calls **The Third Transformation of American Education** is outlined with some detail in the third chapter. The fourth chapter concerns itself with examples and demonstrations of possible options that support this transformation. In addition the fourth chapter contains a comprehensive explanation of a proposed synthetic model which is offered as a benchmark for the development of progressive experiential education systems.

Finally the impact of present and emerging technology is identified as a primary social force that will determine the direction and characteristics of future transformations of education.

I

THEORETICAL PERSPECTIVE

BASIC CONCEPTS

THE SOCIAL SYSTEM.

This section will focus on some fundamental concepts needed to understand the *Social System*. Max Weber identifies social action as the probable result of a social relationship. A social relationship is used to describe the behavior of a "plurality of actors" in a context and their considerations of and reactions to each other (Weber b, 26). He cites as an example, the collision of two cyclists. The act of hitting each other is a "natural" event; the possible attempts to avoid each other, and the subsequent discussions (verbal or non-verbal; friendly or unfriendly) after the incident, however, constitute social action (Weber b, 23). The fact that actors or agents consider and take into account each other's behavior (or possible behavior) suggests that an interaction is occurring. Social interaction has been defined as people mutually influencing each others' behavior or expectations of behavior (Ashley et. al. 16). Social action and interaction are necessary for society to exist, even in its most primitive forms.

When groups of people interact, situations become more complex. Developing Weber's ideas, Talcott Parsons perceives the emergence of a network of relationships into the formation of a **social system**. The structure of this system is essentially "the

structure of the relations between the actors as involved in the interactive process" (Parsons a, 25). Because he identifies a social system as a single entity within which interaction takes place, Parsons is able to construct a model which describes behavior *internal* to the system as well as behavior with *external* entities. These sets of internal and external interactions are positioned against two analytic concepts: *instrumental* and *consummatory*. Ashley, Cohen & Slater characterize instrumental as the *means* of action, while the consummatory refers to the *ends* to which the action is oriented (Ashley et.al. 33). They adapt the following model from Parsons "General Theory in Sociology" in Merton et. al. *Sociology Today: Problems and Prospects*.

THE SOCIAL SYSTEM

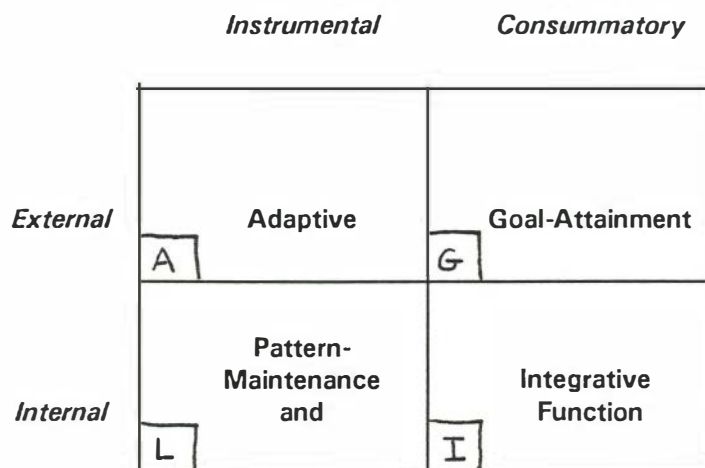


figure 1: Adapted by Ashley, Cohen And Slater 1969 from Parsons "General Theory in Sociology" in Merton et. al. Sociology Today: Problems and Prospects

The "L" cell contains those functions necessary for internal socialization.

Activities would include pattern maintenance, preparation of a labor force, generativity, and control of the culture. Included here are the agencies of learning: churches, artistic institutes, schools and colleges. Some of the functions of the family also fall into this group.

The other internal cell, "I," is concerned with integration and internalization of the values and norms within the system. Those activities that are focused on internal solidarity, maintaining a sense of community, or achieving collective action would be functions of this grouping. Examples would include nationalist political parties and agencies which attempt to *institutionalize* the social system's norms such as courts, social welfare agencies, hospitals etc. In pluralistic systems, the political process (including public elections) would be identified here as an aspect behavior "aimed at obtaining agreement in the system" (Ashley et.al. 34).

The first of the external categories is the "G" cell. This cell is oriented toward the attainment of goals that are external from the system. Political activity with external entities is a function of this cell (for a country, it would include foreign policy; for a corporation, it would include the marketing of products etc). Also of concern to this cell are the spiritual aspects of religion, as they are likely to aspire to ideals outside of the system. The "missions" of smaller organizations like factories, prisons, and schools can also be seen as functions of this category, when the model is micro-sized to analyze organizational subsystems within the greater social system.

The final cell, "A" is the *means* by which the system achieves its goals or *ends*. Labor is a means by which a factory achieves its ends -- a finished product; technology is

another. Sale of the finished product is the means by which a company makes a profit. On a macro level, the process by which a country takes its place within a global economy is the function of this cell.

Social systems can now be defined as complex clusters and networks of entities which emerge to satisfy the needs of an interactive group. Cole and Cox offer a definition as a "constellation of people, symbols, culture traits, behaviors, ends, values, patterns of authority, roles and status structures , and relationships which are developed by man to achieve or satisfy needs" (Cole & Cox 1). They further note that these systems have a longevity beyond the lifespan of any one generation, and that rather than emphasizing persons, they emphasize the roles and statuses expected of persons (12).

THE NATURE OF INSTITUTIONS

The functionalist social scientists recognize that this model does not work in a vacuum, that is, certain processes must be at work between and among the cells in order for the system, as a dynamic holistic entity, to operate. Merton highlights this by proposing the **postulate of indispensability**. This axiom identifies two conditions for system functionality. First, that there are *functional prerequisites* or "*preconditions functionally necessary for society*." These are "certain functions that are indispensable because without them society will not persist." The issues or functions identified in the above model meet this condition. Second, cultural or social constructs in the form of agents or agencies are necessary for fulfilling these functions (Merton b, 87).

In broad terms, *institutions* have been defined as social groups which are

components of the larger aggregate (the social system); and integration of this group into the system is instrumental to the system's functioning (Cole & Cox 20). Figure 2 is a schematic representation of the major social institutions and the needs they serve.

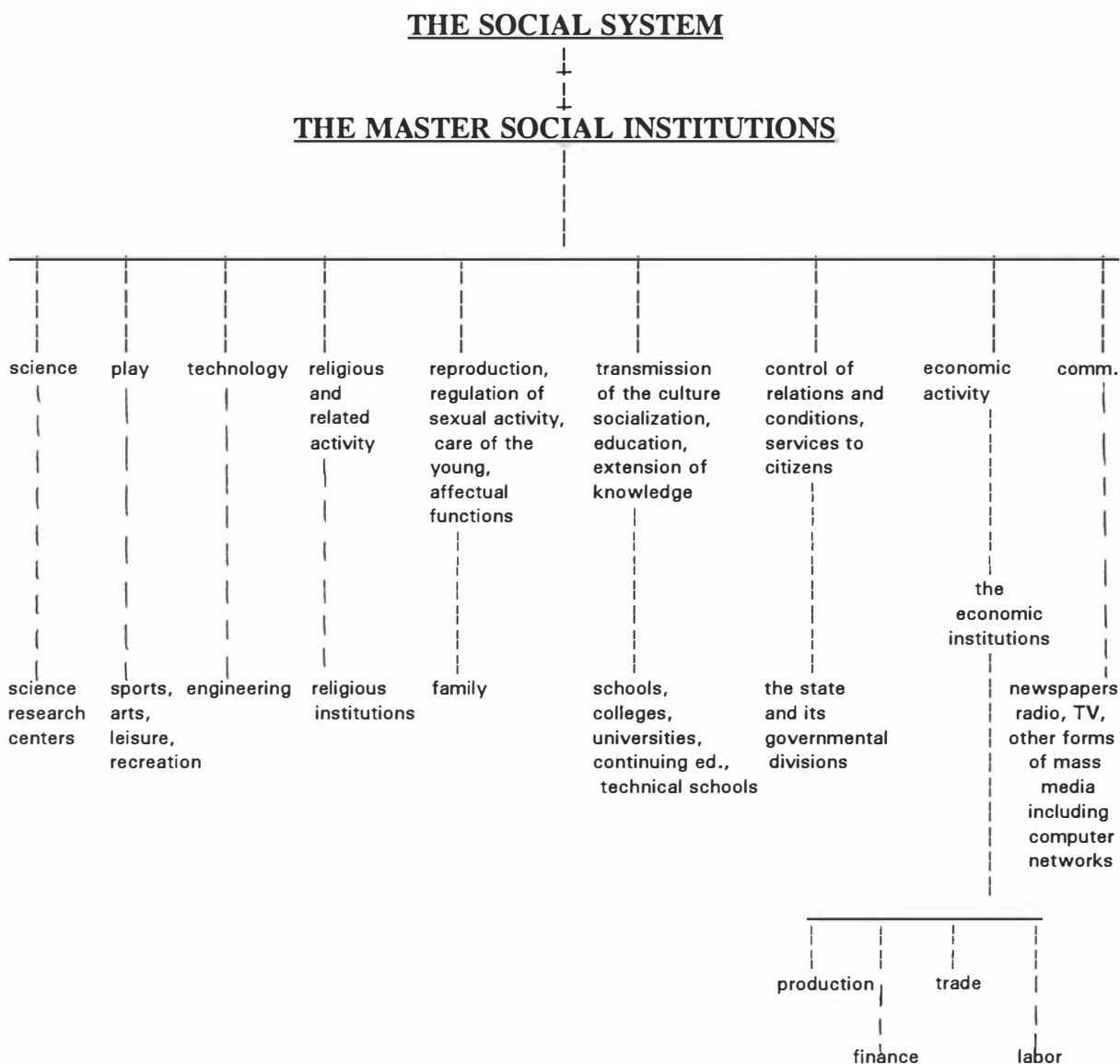


figure 2. schematic representation of the major institutions and their functions adapted and expanded from a model in Cole and Cox: *Social Foundations of Education*.

Kornblum suggests that institutions are stable structures designed to fulfill the functions of the society (Kornblum 111). More specifically, however, the methodology of an institution varies with the demands of the society or system it serves. This issue is stressed by the following two points: 1) social institutions are cultural configurations and as such they are established to meet the needs of a specific society; and 2) social institutions embody the normative, standardized way of solving problems (Brookover 40, Hertzler 5). This framework which focuses on institutions' cultural, normative and standardized aspects suggest the idea that despite the stable nature of institutions, they must build into their process a feedback mechanism so as to perform three self-regulatory maintenance operations. Owing to the dynamic nature of the social system, they must 1) constantly assess the changing needs of the system; 2) evaluate the institution's ability to fulfill the system's requirements; and 3) perform the necessary self-regulatory adjustments in order to continue to meet the system's needs.

The issue of whether a system (or sub-system, institution etc.) is meeting its functional requirements is addressed by Merton. *Functions* are identified as "those observed consequences which make for the adaptation or adjustment of a given system"; *dysfunctions* are " those consequences which lessen the adaptation or adjustment of a system (Merton b, 105). We might conclude therefore, that if an institution or sub-system is performing its self-regulatory maintenance operations effectively, the institutional unit is functional. Conversely, if an institution or sub-system is not performing its self-regulatory maintenance operations effectively, the unit is

dysfunctional. We will return to these issues of functionality, dysfunctionality, and self-regulation in later sections of this paper.

THE THEORY OF INSTITUTIONAL INTERDEPENDENCE

What seems to be clear in the analysis of the Parsons model, is that the many functions of the social system are dependent upon one another for the success of the holistic system. In these system configurations the successful operation of each of the sub-systems is necessary for the success of the whole; but the operation of all as independent entities cannot account for the operation of the whole. By the same token, the successful operation of the whole cannot account for the individual operations (Polanyi 34). The metaphor of a baseball team might be useful here. In order for a team to be successful, each of the players must function accordingly. "Accordingly" means each player must perform adequately at his specialized craft, and an interdependent relationship must exist among the players as a unit or whole. The success of the team, however, does not account for the abilities of each of the players. It accounts for their *functionality*. If each of the players is an expert at his craft, but there is no interdependence, the team will not be successful. It is dysfunctional.

Functional systems such as teams, groups, organizations or institutions are the result of a synergistic effect that occurs when the individual agents are functional units in themselves and the interdependent connections between and among the agents are also functional. Merton cites Weber's *Protestant Ethic and the Spirit of Capitalism* as an illustration of how religious commitment and economic activity are connected (at least in

Weber's mind) and points to a general **theory of the modes of interdependence between social institutions** to explain the phenomena (Merton b, 63).

Many educational sociologists throughout the years have been concerned with issues regarding the functionality of educational institutions within a social system and the social relationships between the schools and other aspects of a given community (Brookover 8). An example of this type of institutional interdependence involving education is implicit in a position statement published by the superintendent of the Springfield Massachusetts public school system: "The relationship between the school, the home, and the community must be understood and internalized. Schools need the community and the community needs the schools" (Negroni 27).

This notion of interdependence can also be applied to education and its functional responsibilities as demonstrated by Finney and Zenely. "...it is clear that the school program should exhibit a proper relation to the culture mass. If the program of the school does not transmit the culture of its own time, there is something radically wrong with the school." They go on to identify the types of education necessary to socialize the individual into society. Identified are education for: participation in family, participation in the community, industry, participation in citizenship, participation in school life, participation in recreation, health preservation, use of the press, and morality (Finney and Zeleny 185-198). It is clear that these connections are focused on education's role as the agent for integrating the individual with the other functional institutions.

EDUCATION

EDUCATION AS AN INSTITUTION

We have established that the social system is an organized complex whole which is constructed by a set of interconnected parts we call sub-systems or institutions. Further, each part of the system is dependent on the other parts for input so as to deliver an effective output. This section will focus on those characteristics which establish education as an institution and thereby functional component of the system.

Within the social system, the functions of socialization, basic education, labor force development, and the extension and expansion of knowledge, is in large part, the task and goal of the institution of education. The agencies of education are schools (technical and preparatory), colleges, universities, academies, professional training organizations, and to some degree, family (although, later, we will see how, with industrialization, the focus has shifted away from the family to these other agencies).

The fundamental mission of education is twofold. As an instrument for the expansion of knowledge, it seeks to explore the unknown and share this information with its constituency. As an instrument for social change, it shares with other institutions, the ownership for the development of the future of the social system and its members. In these capacities, it is the charge of education to understand the current needs of the society, anticipate the future needs of the system, and provide a process for enculturating and socializing its members. Brookover points out that the structure of the educational system, the requirements of the students, the development of curricula, and the techniques used to teach are determined by the particular needs of society (Brookover

40).

As an institution, educational agencies share the same tendencies to grow into large, complex structures, and to develop bureaucratic characteristics. They have values, norms, rules, roles and statuses and are loaded with complex cultural and social relationships. This is the primary reason that change within the educational structures can be slow and difficult. It is not unusual for the institution to be out of step with the requirements of the social system. These points will be explored further in the next chapter.

THE ROLE OF EDUCATION

Within the scope of education's twofold mission, its role, like the roles of the other institutions, is determined by the needs of society within the temporal social context. In other words, the needs of the society at any given time in its history, set the requirements for education's *institutional functionality*. This point has been made in many perspectives of educational theory and educational sociology. Brookover's view offers education as a virtual servant to the social system by suggesting that the school "serves the function of meeting societal needs." In his model the job faced by education is the training and socialization of the individual. These tasks, he states, will vary with the needs and demands of the particular society (Brookover 40).

Musgrave concentrates on education's broad social functions by identifying five classes of educational activity. 1) *The transmission of the culture of society*, this involves passing on the society's patterns of action through educational agencies; 2) *The provision*

of innovators, here the institution is responsible for introducing innovations in technology, arts, politics, economics etc. and initiating necessary social transformations;

3) *The political functions*, which are twofold: first, to provide political leaders, and second, to preserve the system of government by ensuring loyalty; 4) *Social selection*, the assertion here is that the education system "sorts out the more able from the whole"; and 5) *The economic function*, education must meet the social system's requirements for a socialized and skilled labor force. This means that education should provide the quantity and quality of peoplepower necessary to supply all levels of labor under current technical, political and economic conditions (Musgrave 242). This perspective places a great deal of attention on the economic/labor force issue and its relation to the survival of the society. In order to achieve functionality, workers at all levels must have the *skills, attitude and knowledge* to match the current technology and they must be willing to use them "to the utmost" for the economy to survive (322). His view on how education is controlled and directed differ slightly from Brookover's servant model. Musgrave proposes that the specific goals given to educational institutions are the result of social and political processes (191).

Other theorists take less of a subordinate position, but emphasize education's participatory aspects. Ashley and his colleagues, for example, point out that a primary educational function is to "contribute to the process of socialization by transmitting much of the culture of society to each new generation" (Ashley 79). John Dewey, perhaps the most influential modern educational philosopher, stresses the connection between education and democracy. In *Democracy and Education* he expresses the belief that less

educated people are more likely to follow extremist political leaders. In addition, educated citizens would be more likely to participate in the ruling of the country. In addition, he believed education would lead to greater tolerance of others' views and provide a means for making rational political choices (Dewey, various). The connection between voting and education was supported by Lipset in a study which indicated that countries that stressed longer education experienced greater and more consistent participation in elections (Lipset).

Parsons also offers a participatory and somewhat social psychological approach to the problem of socialization and laborforce development. Schools are defined as agencies where individual personalities are trained to be "motivationally and technically adequate to the performance of adult roles. He summarizes socialization as the development of a commitment to the implementation of societies values and "commitment to the performance of a specific type of role within the *structure* of society. Implicit in the performance of an adult role is the idea that an adult must work at some profession or craft within the labor force in order to contribute to the social system. Skills or "capabilities" for work are broken down into two categories: skills to perform tasks (skills of the trade), and a sense of role-responsibility (Parsons b, 397-8). This notion of role-responsibility corresponds to Musgrave's *attitude*.

In an organizational approach to the problem, Scott recognizes that most hiring organizations that require highly-trained personnel, must rely on "socializing institutions such as universities and technical schools" for employment candidates because they cannot bare the costs for extensive training programs (Scott 518).

In 1987 The U.S. Department of Labor commissioned The Hudson Institute to assess the state of the U.S. labor requirements and trends for the future. The report titled *Workforce 2000: Work and Workers for the 21st Century* asserted a strong statement regarding the role of education and its link to economics: "Education and training are the primary systems by which the human capital of a nation are preserved and increased. The speed and efficiency with which systems of education transmit knowledge governs the rate at which human capital can be developed. Even more than such closely watched indicators as the rate of investment in plant and equipment, human capital formation plays a direct role in how fast the economy can grow" (Hudson 162).

II

HISTORICAL PERSPECTIVE

EDUCATION DURING THE EARLY MODERN ERA

In order to fully understand the systems of education in America, one must turn to Europe for structural models. The American educational system is rooted in two basic European educational processes: the university and the apprenticeship.

UNIVERSITIES

The principle education centers during the Early Middle Ages were the monastic schools where scholasticism and church directed learning was the order of the day. Teachers were paid by local churches and their bishops to teach grammar, logic, and rhetoric. The Late Middle Ages (specifically the 12th century), however, saw the emergence, development and growth of a more intellectual type of education. The center for this activity was the **university**. It was here that students, hungry for knowledge, could gather around well known teachers, famous for a discipline, or a particular perspective. The actual origins are unclear, but it is generally believed that the rediscovery of Aristotle (as well as other Greek thinkers), the introduction of Arabic mathematics and science, and a need for men trained in Roman jurisprudence, politics,

and business, attracted students and teachers to major cities such as Paris and Bologna, where they formed associations known as *guilds*. These *guilds* were necessary to protect the intellectuals from the parochial interests of the church or the town authorities. These associations became the centers for learning we call universities.

Guilds came in three basic arrangements. Some were formed by corporations of instructors and masters such as the University of Paris (an evolution from the Cathedral School at Notre Dame). Others, for example Bologna, were formed by corporations of students. An important note here is that these student groups, organized into a single body, were able to make demands on the instructors such as curricula and scholastic standards. At Bologna, professors were even fined for absences and lectures that drew low attendance (Perry 226). A third group consisted of corporations of masters and students. The Medical School at Salerno (which has its roots in the 9th century) is an example of this type.

At these universities students attended lectures, studied for examinations, and received degrees. Most commonly, students and masters explored what came to be known as the Seven Liberal Arts: grammar, rhetoric, logic, arithmetic, geometry, astronomy, and music. In addition, however, one could study the technologies needed for practical applications such as law, medicine and business. These curricula were based on Latin translations of the works of Aristotle, Euclid, Ptolemy, Hippocrates, and others. This meant that the student had to be fluent in Latin in order to study. Clearly, fluidity in Latin was reserved for those with money. Therefore, the students who attended the universities, came from the wealthy (or at least well-to-do) classes.

Perry et. al., notes that universities performed a vital function for the society of the Middle Ages. "Universities trained professional secretaries and lawyers, who administered the affairs of church and state; these institutions of learning also produced theologians and philosophers who shaped the climate of public opinion" (ibid. 227). In other words, universities were responsible for the development of "professionals": doctors, lawyers, administrators, engineers, etc..

APPRENTICESHIPS

The other formal process for education, the one favored by much of the middle class, was the **apprentice/journeyman** system used by *craft guilds*. Basically, the parents of a child would enter into an agreement with a master of a craft or trade. The child, often under the age of ten years, became bound to the master for a specified length of time -- usually about seven years. The apprentice would work for the master without pay. In return, the master would train the apprentice in the craft or trade, often teaching the student family or guild secrets. The master also supplied housing, food, clothing, and cared for the apprentice in times of illness.

After completing the apprenticeship , the now skilled worker (about sixteen years old) would become a journeyman. Journeymen were paid cash wages and worked for the same or another master in hopes that one day he would become a master himself.

Laslett uses the 15th century bakery as a typical example of how the system worked and how the process was built into the *family structure*. Typically, the business was carried out in the master's house. Attached to the house was a workshop where the

breadmaking took place, and a *garner* where he kept his wheat, coal and salt. About a dozen people lived and worked there. The employer was not only master of the business, but also master of the house. While he was biological father of some, he assumed the role of father to the rest. "There was no sharp distinctions between his domestic and economic functions" (Laslett 39). Everyone except the journeymen lived in the master's house, so, in effect, the apprentices were extra children of the master. Even the paid journeymen were subject to the house rules of the master. For example, they could not court or marry without the master's consent, nor could they frequent the local *public house* without permission from the master.

We can see now, that in sharp contrast to the university system, where learning took place in groups and in a centralized location, the apprenticeship took place in small groups (or one-on-one) within a family. *The family was responsible for the education.*

The function of *craft guilds* was different from that of the *student guilds* in the universities. While both guilds set quality standards for the training and education of students, craft guilds also served as brotherhoods (rudimentary labor unions) and in some ways, operated like chambers of commerce. Guilds set the standards for the masterwork that every journeyman had to complete as a demonstration of his skill (Rice 48). This is an important point because we begin to see a business community's influence (and even domination) over a formal educational process.

EDUCATION IN AMERICA

The two contrasting systems identified above were the two formal processes used in America throughout its early years. Before the Civil War, America was largely an agricultural society. At least 70% of the total American labor force were farmers or farm laborers (Trow 145). The education of children fell into three categories. Children of farmers were educated (perhaps "trained" would be a more appropriate term) informally, in the home. The material taught depended on the values of the family. If the family thought that reading was important, it was taught - probably by the mother. The real focus, however was on the development of practical skills needed to tend the farm and livestock.

The second group followed the craft guild apprenticeship system. This was usually located in the towns and cities. The third group was comprised mostly of the wealthy and upper middle class. This was the group which focused on the liberal arts education necessary for preparation to enter the university system. The schools where these children were taught, only numbered about 500 and were concentrated in the Northeast.

THE FIRST TRANSFORMATION OF AMERICAN EDUCATION

There is no shortage of literature to support the idea that educational systems change when the social system moves from agriculture to industry. The complexity of

the social system's role structure categorizes the society and determines the system's needs (Durkheim 137, Musgrave 183). The consensus supports a hypothesis that reasons that with industrialization comes increased system complexity and therefore a need for specialization that cannot be handled by a single resource, much less, a family. Before the industrial revolution training for adulthood was the primary responsibility of the family. With the industrial revolution, however, came the development of the factory system. Migration followed. Urban centers grew, and with them came mass production machinery and a demand for highly specialized individuals. This increase in industrialization and specialized *division of labor* produced an increase in the variety of roles that people had to be socialized into (Ashley et al. 79). The need for skilled and carefully trained individuals produced a decline in the family as the primary socialization mechanism (Brookover 42).

CHANGES IN SOCIAL FORCES

As mentioned above, America was an agricultural society before the Civil War, depending on cotton, tobacco, corn, and various grains for its economy. After the Civil War, with the abolition of slavery, and the destruction of many southern farms and plantations, America turned toward industry for its survival and growth. History generally recognizes that the American version of the Industrial Revolution peaked during the period between 1870 and 1910. The economy based on thousands of farms and small businesses transformed into a social system based on large organizational bureaucracies. These new sub-systems required coordinated managerial and clerical staffs to implement

centralized decision-making (Trow 145).

When the organizations grew, the use of paper as a medium for the transmission of information grew exponentially. Paper replaced verbal orders, carried the work flow, maintained inventory histories, and standardized work processes. People had to be trained to process the paper. They had to learn to prepare, type, file, and interpret data. There was no adequate process for training these skills. The growth of the American public secondary education system was largely the social system's response to the economic institutions' need for white collar employees (ibid).

The change in occupational roles was not the only reason for the growth of the secondary educational system. Between 1880 and 1910 there was a massive flow of immigrants into the United States from Germany, Italy, Poland, Russia, the Baltic States, and Southern Europe. In 1907 alone, over 250,000 Italians and 338,000 Poles were admitted through Ellis Island (Kornblum 432). Figure 3 is a graph showing the variations American immigration between 1850 and 1990.

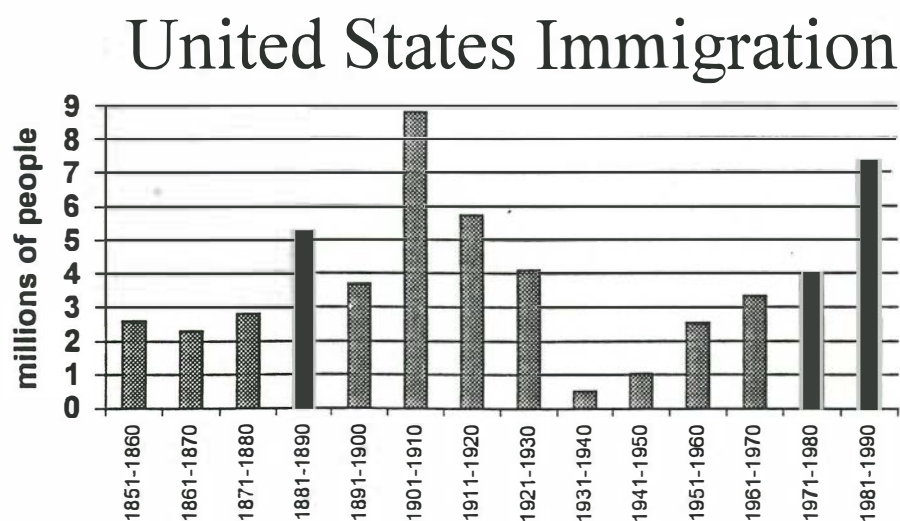


figure 3. The immigration statistics from 1850 to 1990. (statistical and historical abstracts)

Immigrant families gathered in the industrial urban centers in search of work.

The movement to abolish child labor and the subsequent state compulsory education laws also had their effect. Attendance at public high schools increased dramatically. In fact, attendance doubled every decade from 110,000 in 1890 to 4.5 million in 1930. The vast majority of these students "came from poor, culturally impoverished homes, and had modest vocational goals" (Trow 149). Many of them were there unwillingly. Education specialists, and social scientists felt that these children were in need of "Americanization."

The crafts and tradespeople had their own problems. Technology was advancing faster than at anytime in history. The craftwork skills of the past were no match for high production assembly lines and technology aided manufacturing. What was needed from tradespeople now, was machine building and repair skills, and machine operation know-how. These skills could not be taught by the old masters.

The traditional American high schools (the preparatory schools and academies noted earlier) were not in a position to deal with these new problems -- nor were they inclined to. The academies and "prep" schools were aligned with colleges and universities. They felt that it was their mission to prepare students for college and subsequent professional careers. After all, they were successful at what they did. They appealed to and attracted the well-to-do, the drop-out rate was very low, and most of the graduates went on to college. This system, however, was not for the masses. In 1870 about 16,000 students graduated high school -- about 2% of American 17 year olds -- and 70% of those graduates entered eastern colleges.

Because of these social tensions, a gap grew between the needs of certain functions within the social system, and what the institution of education was producing. In order to remain *functional*, the institution had to respond to the system's needs. It must find a way to develop a *paper-pushing workforce*, "Americanize" immigrant children, and deal with unwilling and unmotivated students.

THE TERMINAL HIGH SCHOOL

The institutional response to the social dynamics was the development of **terminal high schools**. These schools changed to keep up with demands of the culture: complex commercial relations gave rise to commercial education; new trades, crafts, and vocations gave rise to vocational education (Finney & Zeleny 199). Terminal high schools were designed to meet the needs for workforce development without college.

TEACHER ROLES

With the emergence of this new high school, it became obvious that the old curricula could not work. The students were different, the skills needed for the society were different, so the teacher's role had to be different. The focus was not to prepare one for college, but to meet the demands of a new society. The new State Teacher's Colleges and the Department of Education were created to train staffs for these new schools. Concentration was given to teaching values which focused on citizenship; and skills and knowledges focused on the performance of useful tasks.

The emergence of what came to be known as the "child centered school" was a

response to the diversity of backgrounds, needs, and vocational interests of the new student population. Trow points out that these changes are evidence of how educational doctrine is influenced by social trends (150). By 1930, *the first transformation of the American educational system* was complete.

THE SECOND TRANSFORMATION OF AMERICAN EDUCATION

CHANGES IN SOCIAL FORCES

Although the complexion of American society had changed from 1890 to 1930, the same social forces that had forced a transformation in the education system were at work again in the period between 1940 and 1970.

After a ten year lull during the 1930s (the period of The Great Depression), immigration during World War II, and in the following decades, again increased dramatically (see figure 3). From 1940 to 1950, 1,035,039 immigrants were admitted into the U.S., double the amount from the previous decade. From 1951 to 1960, the figure more than doubled again to 2,515,479; and from 1961 to 1970, more than 3,322,000 immigrants were admitted (statistical abstracts). One should note that these figures represent official U.S. Census counts, and do not include the estimated hundreds of thousands of unofficial "illegal" entrants into this country.

Immigration notwithstanding, the impact of technology during this period must be recognized as the major contributor to another, dramatic change in the occupational structure. The emergence of computers, television, nuclear power, and other high tech industries like radar and satellite communications, placed a demand on education for a

trained labor force that was unprecedented in human history. Trow notes that while the period between 1910 and 1930 saw clerical work as, by far, the fastest growing class of occupations in the U.S., the period between 1950 to 1970 belonged to technical and professional occupations (154). Between 1940 and 1950 the number of research workers grew by 50% and the amount of engineers in the country doubled. The real shocker, however, is that while the labor force grew by only about 9% between 1950 and 1960, the number of professional, technical, and managerial workers grew 68% (statistical abstracts). These occupations require at least some college or post secondary education. The increase in enrollments at colleges and universities was proportional to the workforce need.

The similarities between the enrollment statistics associated with the first and second transformations are striking. Figure 4 compares high school and college enrollments as percentages of specific age groups from 1870 to 1990.

College Enrollments as Percentages of Specific Age Groups

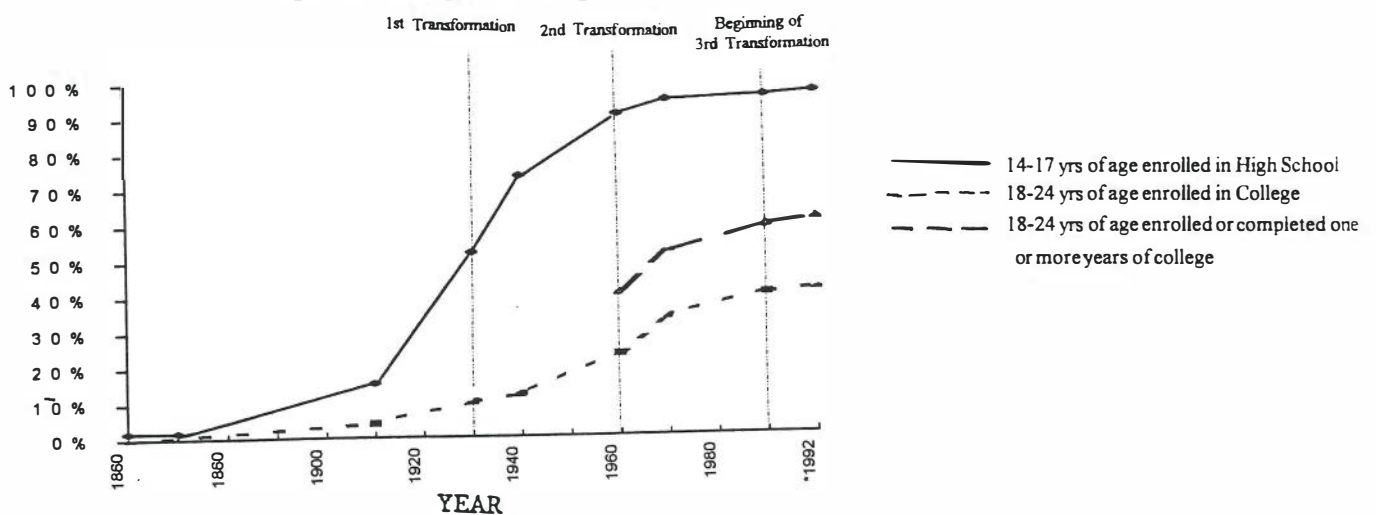


figure 4. percentage of population enrolled in high school and college for specific age groups (stat. and hist. abstracts).

In 1870 only about 2% of seventeen year olds graduated high school. In 1910 15.4% of 14-17 year olds were enrolled in high school, while about 4% of 18-21 year olds were enrolled in college. By 1930, the completion of the first transformation, about 52% of 14-17 year olds were in high school and about 10% of 18-21 year olds were in college. In 1940, only ten years later, high school enrollments had soared to 73.3%, and college had reached about 12%. By 1970, however, the completion of the second transformation, attendance at high schools reached over 95% and college enrollments reached 39.6%. Even more startling is that by 1970, 52.3% of 18-21 year olds were either enrolled or had completed one or more years of college (statistical abstracts, historical statistics). These numbers do not include high school or college attendees outside of their prospective age brackets; nor do they include attendance at post secondary vocational, technical or business schools.

A MASS PREPARATORY SYSTEM

It is clear that by 1970, attendance at high school had become ordinary expected behavior, and that college, or some kind of post secondary education was going the same way. The workforce needs generated by the rapid growth of technology, placed demands on the educational system that were not easy to meet. In addition to the maintenance of a mass secondary subsystem which had become mostly terminal, the larger social system was demanding a mass preparatory process for students who aspired to enter college. This is not to suggest that there were no college oriented students before this period. The traditional prep schools and academies still existed, and the public system attended to

those who could not afford the high costs of the private schools. These students, however, were a minority in the mass terminal system, and in many cases were isolated into "college bound" type programs.

The necessary transition was much more difficult than the first because while the first transformation required the development of a system, this new change required transforming a very large existing subsystem with ingrained, institutionalized structures (Trow 154). The challenge was further complicated by the need to continue to perform the terminal function while expanding the preparatory function. Many school systems introduced alternative *tracks* to address this need. *General diplomas* were issued for terminal tracks. *Commercial diplomas* were granted to students who prepared for careers in clerical and administrative functions. *Academic diplomas* were awarded for successful college preparation. In addition to these, the amount of vocational high schools, which replaced the traditional apprenticeship process, grew dramatically and *experiential programs* such as *cooperative education* were expanded.

The new mass preparatory school system faced another social challenge. In the past, educators were dealing with students whose parents had not reached high educational levels. These people (many of them immigrants or of rural origins) had little interest in the design of an educational curriculum that they did not understand themselves. Curriculum design, therefore, left to educators and other "sections of the academic community" (ibid 156).

The new generation, was different. Most of these parents had completed high school; some had gone to college. This public at large began to side with the critics of

the educational system. Local school boards with lay directors and board members were increasingly accepted as normal. Parents organizations became active in issues other than fund raisers, like library management and principal selection. They forced curriculum changes which effected the entire educational process.

TEACHER ROLES

The new mass preparatory system required a new breed of teachers. With the technology expansion mentioned above, teachers had to learn new skills and techniques to pass on to students. For the first time in decades, advanced mathematics (termed "new math") was taught at elementary levels. Vocabulary, grammar and writing skills requirements were raised. Television brought experts from all fields into the classroom. In general, "Americanization" took a back seat to humanities and sciences and teachers had to keep pace.

The cultural revolution that took place in the 1960's further complicated matters. The role of the teacher required a sensitivity to student diversity that had never been expected in the past. The political climate forced teachers to address such issues as civil rights, desegregation, the Viet Nam War, and the birth of the ecological movement. The cultural climate forced discussions of drug use, sexual promiscuity, and even cigarette smoking. Teachers now had a new role, one that required a different kind of skill. Teachers now had to be group discussion facilitators. While some teachers welcomed this new *humanistic* approach, many were not comfortable in their new roles. Nevertheless, by the early 1970s, the educational system had transformed again.

III

THE THIRD TRANSFORMATION OF AMERICAN EDUCATION

CHANGE IN SOCIAL FORCES

In the 1990s, the complex social dynamics that necessitated changes in the American educational process are driving the system again. The inevitable result must be the adaptation of the institution of education to the needs of the system.

WORLD POLITICS

There have been, in recent years, changes in the world political scene which are effecting the global social system to such a degree, that mention of them here might help to understand the need for changes in the educational sub-system.

The destruction of the Berlin Wall in 1989, and the subsequent reunification of Germany, symbolized a beginning of a new era in world politics (Kornblum 649). Shortly after, came the fall of most of the European Communist and Socialist governments, most notably: Yugoslavia, Rumania, and the dismantling of the Soviet Union. This change in political climate had several implications. First, this meant that citizens of these countries were now free to purchase internationally marketed goods. The doors of these countries were now open for capital intensive corporations to "set up"

business and sell in new markets. The second point is that these countries could now establish businesses to sell their products to previously forbidden markets.

Another interesting note is that coinciding with the changes in world politics, is another dramatic increase in American immigration figures (see figure 3). This time however, the entrants into the U.S. are higher educated (Ph.D.s, and other post secondary certifications), and work in high-tech industries such as computer technology, medicine, biochemical technology, and telecommunications.

TECHNOLOGY

The evolution of the computer, as discussed in the previous chapter, has revolutionized the way information is stored, retrieved, processed and disseminated. The advances over the last two decades, however, are almost incomprehensible. There is no reason to describe them here except to note the general impact computers and other forms of electronic technology has had on the economic and labor markets. In the Hudson Institute's *Workforce 2000* report it is pointed out that the continuing evolution of computers will mean that it will be "trivially cheap" to apply machine intelligence to many jobs that are currently held by people (34). This point may have already been realized. Manufacturing employment has been dropping steadily. In 1988, it required less than 40% of the blue-collar man-hours it took to produce the same amount of goods in 1973 -- only fifteen years earlier (Drucker, b, 123). This in not meant to imply that career opportunities are diminishing. The opposite is true. New areas are emerging from this technological growth in areas such as: computers, communications, synthetic

materials, energy, and biotechnology.

Technology also changes the nature of how corporations do business. In an example highlighted by Hammer and Champy, Procter & Gamble and Wal-Mart merged their inventory and distribution systems in ways that were beneficial to both businesses (22). This example illustrates a business processes that requires labor skills radically different from those of pre-high-tech environments. They further assert that technology, in one form or another, should become a core competency of any business (100).

Workforce 2000 identifies three fundamental changes in the economy as a result of technology growth: 1) technology is overcoming the barriers of time and space that have existed throughout the centuries; 2) technology is *lightening* the economy ie. products are becoming lighter and more durable; and 3) the technology change is so rapid that no one firm or nation can handle it alone (37).

GLOBAL ECONOMY

With the changing world political structure and the incredible expansion of technological innovation, comes the emergence of the **global economy**. The overcoming of time and space as cited above, has tightened the net of world society. Advanced microwave, fiber optic, and satellite telecommunications make contact with foreign markets a phone call, fax, or E-mail away. Jet airplanes (some of which are supersonic) and huge container ships can deliver products anywhere in the world faster than was ever believed possible. In the past, corporations were able to set prices because supply never kept up with demand. Now, world markets establish the prices of everything from

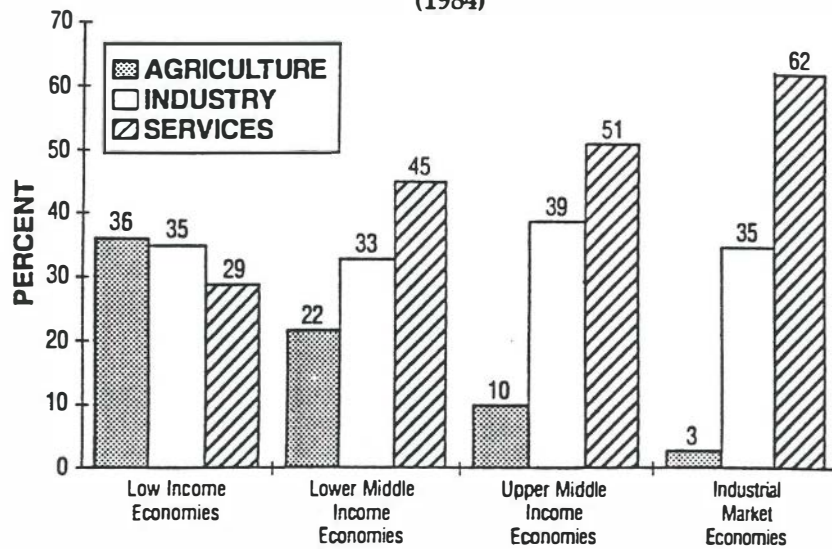
clothing, to wood to semiconductors.

As a move to further integrate into a world economy, the world's monetary markets, led by the U.S., have established **floating exchange rates** (Drucker a 154). Because exchange rates change on a daily basis, the money and products become integrated into a **macro socio-economic system**. Global competition intensifies. Reciprocity becomes the basis for business integration (Drucker b, 132). Trade barriers fall and the ability of a corporation to control a national turf becomes virtually impossible. For example, U.S. home appliance manufacturers are now competing with Germans, Japanese, Koreans, Taiwanese, and French companies for the business of American consumers (Hammer and Champy (21).

THE U.S. SHIFTS ITS FOCUS FROM MANUFACTURING TO SERVICE

Growth in service industries (health, education, trade, finance, insurance, real estate, technology consulting, retail sales, and government) seems to be indicative of advancement in industrial countries. *Workforce 2000* cites the 1986 *World Development Report* issued by The World Bank showing that services account for the largest share of production in advanced countries. Figure 5 shows that in the low income countries, only 29% of the economy is service, while in the advanced market economies, over 60% is service oriented.

**SERVICES ARE THE LARGEST SHARE OF
PRODUCTION IN ADVANCED
INDUSTRIAL COUNTRIES
(1984)**



Source: The World Bank, World Development Report, 1986

figure 5: Hudson Institute's extraction from the 1986 *World Development Report* (The World Bank)

Drucker highlights the fact that the economy is becoming less material intensive. in the 1920s, 60% of the costs of a product lay in raw materials and energy. In the 1980s, raw materials account for only 2% of production costs. Further, where land, labor and money used to determine competitive advantage, **investment** is becoming the world's economic driver (b, 122-3). In describing the qualities needed for American companies to survive in the 1990s and beyond, strong executive leadership, focus on customer's and their needs, and superior process design and execution are usually identified (Hammer And Champy 215). These are all service issues, rarely, if ever, is attention given to the traditional issues of raw materials or production costs.

Finally, *Workforce 2000* advises that since services are, by far, the largest segment of the American economy -- and as such employs more people than other

industries (see figure 6 -- government should target its efforts to increase productivity in these industries (xxiv). Perhaps the strongest way to do this is through support of changes in education.

THE NINE LARGEST SERVICE INDUSTRIES (1986)

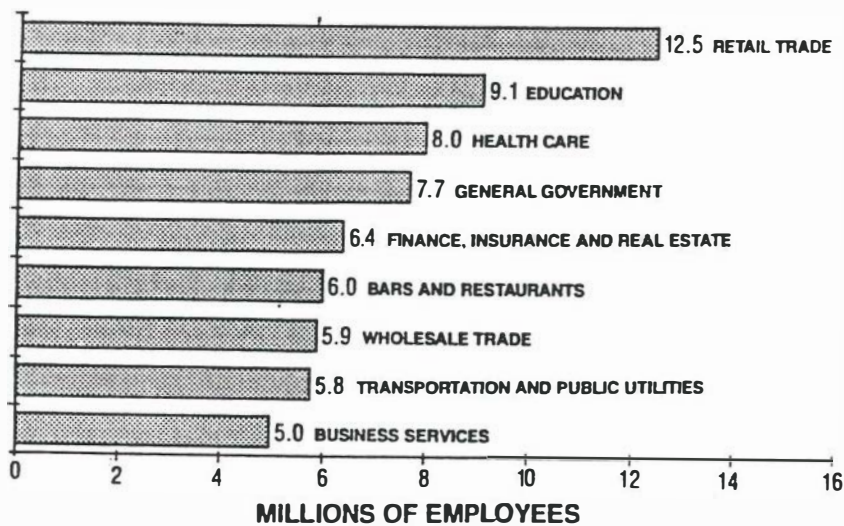


figure 6

Source: Derived from U.S. Bureau of Labor Statistics, *Employment and Earnings*, January, 1987

CHANGES NEEDED IN EDUCATION

A NEW WORLD DEMANDS NEW SKILLS

In June of 1991 The U.S. Department of Labor released the results of an extensive study. This report was the findings and recommendations of "The Secretary's Commission on Achieving Necessary Skills" (SCANS). They identify the globalization of commerce and industry and the "explosive" growth of technology as responsible for "changing the terms for our young people's entry into the world of work" (xv). For the

(xv). For the first time in history, most new jobs will require post secondary education. Many professions will require as much as a decade or more of post secondary education. The massive increase in college enrollments seems to support this (see figure 4). In 1992 96% of 14-17 year olds were in high school, and 60.7% of 18-24 year olds were either in college or had attended for one or more years.

Many have pointed to the 1990s as the beginning of a **post-industrial era** (Hudson 116); **post-business society** (Drucker b, 173); **knowledge era** (Savage 88+); **knowledge society** (Drucker c, 19); **knowledge-based society** (Peters 218); or age of the **learning organization** (Senge 14+). Whatever you call it, three things are clear: 1) the skills required of employees a higher level than ever before; 2) they are knowledge based; and 3) they are radically different from those that prompted the first and second transformations. The Director of the Institute on Education and the Economy at Teacher's College, Columbia University pointed out at a 1989 congressional hearing that job losses were concentrated in low and medium wage manufacturing while job gains were concentrated in "high-wage manufacturing, transportation, and transactional activities, including finance" (Berryman 2).

SCANS points to **five competencies** that will be required to become successful in the new service environment. These five competencies are built on a **three-part foundation**. The foundation includes, within its three parts: 1) *basic skills*, reading, writing, arithmetical computation and mathematical reasoning, listening, and speaking; 2) *thinking skills*, creative thinking, making decisions, solving problems, seeing things in the mind's eye, knowing how to learn, and reasoning; and 3) *personal qualities*,

individual responsibility, self-esteem, sociability, self-management and integrity (15).

This foundational substructure anchors the individual so as to develop the competencies in five categories : 1) *resources*, identifies, organizes, plans, and allocates resources with respect to time, money, material and facilities, and human resources; 2) *interpersonal skills*, works as member of a team, teaches others, serves clients and/or customers, exercises leadership, and works with diversity; 3) *information*, acquires, evaluates, organizes, maintains, interprets, communicates information , and uses computers to process information; 4) *systems*, understands and works effectively with complex organizational and technological systems, monitors and corrects performance, and improves and designs systems; and 5) *technology*, works with a variety of technologies, selects technology, applies technology to tasks, and maintains and troubleshoots equipment (12).

THE GAP WIDENS

"The knowledge we now consider knowledge proves itself in action. What we now mean by knowledge is information effective in action, information focused on results" (Drucker c, 46). The 21st century workplace will require employees who can demonstrate **applied intelligence** - the capability for abstraction, systems thinking, experimentation and collaboration, along with the ability to apply this knowledge in a complex, multi-cultural global environment. It will also require a socialization that includes the use of multiple communication skills, effective interpersonal and self management skills and "relevant work experience" (Wharton). These findings confirm the

research of Demetriou, Ortiz & Ganz which indicates that employers expect employees to demonstrate qualities such as: accountability, decisiveness, resiliency, responsiveness, initiative, and tenacity. They seek candidates who embody values such as high ethical standards, loyalty, and commitment. Furthermore employers stressed the need for potential employees to demonstrate these capabilities and competencies which can only come from world of work experience (2).

Schools and colleges today, reflect the diversity of tomorrow's workplace as projected in the *Workforce 2000 Report*. While the majority of college students work, most remain inadequately prepared for professional jobs and subsequent careers. Their varying levels of education, skills sets, and preparedness for the world-of-work present a serious challenge to education's commitment to the development of its students into a skilled and proficient American workforce. These conditions are further intensified at the elementary and secondary levels where it is estimated that: the majority of high school graduates who do not go to college will enter the job market with no discernable skills (New York State).

Analysis of new workforce entrant skills to future job requirements shows an alarming mismatch between abilities and needs. If global competitive advantage is determined by the capabilities; of its workforce; if the challenge of the 21st century organization is to gain competitive edge by using the skills of its workforce -- a grave deficiency becomes evident. (Demetriou, Ortiz & Ganz).

Another set of challenges is the growing diversity of the workplace as mentioned above. While this is not the primary focus of the current paper, it deserves some

mention here, if for no other reason to demonstrate the geometrically expanding complexity of the present social system. In a report to the U.S. House of Representatives Committee on Education and Labor, William Johnson, Project Director of *Workforce 2000*, stated that a) the population and the workforce will grow more slowly than at any time since the 1930s; b) the average age of the population and the workforce will rise; c) minorities will be a larger share of new entrants into the workforce; d) immigrants will represent the largest share of the increase in the population and the workforce since World War I; e) more women will enter the workplace. Although all these points contribute to the "gap-widening" of the ability of education to meet the needs of the social system, it is this last point which is of special interest here.

Almost 66% of the new entrants into the workplace between now and the year 2000 will be women, and 61% of all working age women will have jobs. At least 52% of the workforce will be women, and well over 60% of all school age children will have mothers in the workplace. In addition, 73% of all working women today are of childbearing age. Child care is an issue that will become more urgent, not only to employers, but to educators as well (Davenport 25). Many educators and educational administrators are women, and as the amount of post secondary student population over the age of 25 continues to grow, child care will be an issue for students as well. In general, the reconciliation of the conflicting needs and roles of women, families and work, must be addressed.

Teacher roles are also a problem. Not only are teachers and professors confronted with diverse cultural issues of the students (as they were in the first and

second transformations, albeit this time with much more complexity), but because of the racing technological growth, in many cases, students are far ahead of teachers (Geiger). For example, students may be more knowledgeable about the operation of computers and have a wider imagination for its applications.

The theoretical perspective of this paper outlined the theory of interdependence among sectors in the social system. The role of education in the system, is to supply the system with a socialized and skilled workforce. As the society becomes more complex and technologically advanced the system requires experts. Education is expected to produce these new experts, but the education system may, at times, be seriously out of step with the needs of its participants because of organizational structures which preclude a flexible response to changing social needs (Ashley 94). It has been pointed out that within large social systems it is almost always easier to create new institutions to perform a new function than it is to transform existing institutions to meet new functions (Trow 154).

Katz recognizes that while new fields of technology (technological and business oriented) are emerging at a rapidly increasing pace, it is inherently difficult to produce new experts by a large bureaucratic social institution whose wheels grind so slowly and whose staffs are themselves inadequately knowledgeable about these new technologies and processes.(447).

The Third Transformation of American Education will be characterized by its flexibility and its dual role at the post secondary level: its traditional function of preparing students for graduate school and subsequent professional careers; and as its re-

constructed role as a terminal college. This second, redesigned role will have a strong external network with conduits into business, not-for-profit organizations, and public sector institutions.

As a preparatory function the system will continue to be successful and evolve appropriately, as did the prep schools and academies of the past. It is with the reengineering of the terminal function that the remainder of this paper will be concerned.

IV

THE RECONSTRUCTION OF THE TERMINAL SYSTEM

BUSINESS/HIGHER EDUCATION ALLIANCES

The **new terminal system** will be linked to those organizations who need future workers. Whether corporate, non-profit, or public sector, these alliances will be made to insure that the skills being developed by education institutions are those needed on the job. Because of the fast pace of today's markets, employers prefer candidates who are already socialized into the world of work and require minimal training investment. In addition, the customer/client focus philosophy has directed hiring organizations to place pressure on education, as they see education's function as a provider of services to business. A new spirit of competition has emerged among colleges, universities, and business, technical, and trade schools for a position in the "labor development market."

This has struck a nerve with educators who feel that the role of higher education is to concern itself with developing students' higher cognitive abilities by focusing on intellectual concepts, theoretical perspectives, and exploratory research. Others, however, feel that students should learn practical skills that are immediately transferable into the job market and workplace. This dialectic will produce a synthesis that is compatible with both perspectives.

In fact, many programs are already in place that link higher education and work. **Corporate tuition assistance programs** such as the Kimberly-Clark Corporation's programs with University of Wisconsin at Oshkosh, pay for employees' attendance at the

college. **Joint curriculum improvement efforts** encourage meetings between hiring organizations and professors in a joint effort to ensure that curriculum material is relevant. Two noteworthy examples are General Electric's Educators-in-industry program which puts educators in the field; and Digital Equipment's Engineers in Education program, which puts engineers in the classrooms as teachers. **Management training** efforts are also being coordinated between many schools and businesses. Attention is directed to framing theoretical learnings within a context so that the student sees and learns the application along with the principle. These programs focus on very clear learning objectives, and measurable results.

Another approach to business/education alliances is the research angle. M.I.T. has had several partnerships including a \$7,000,000, ten-year program with Exxon to find more efficient fuel burning processes. Harvard and Monsanto have a multimillion dollar biotechnology agreement. Johns Hopkins and Estee Lauder have partnered in an institute of dermatology. California Tech has co-sponsored several research programs with Xerox, IBM, Intel, and at least a dozen other major groups (Gold 16).

COOPERATIVE EDUCATION

Co-op has been around since the 1906. In principle, it has probably been around longer than that. For most institutions, however co-op has been, for the most part, an "add-on" program (Van Der Vorm 28). In recent years this outlook has changed. LaGuardia Community College of the City University of New York, for example, has a mandatory experiential component imbedded in the core requirements. Others like The

Illinois Institute of Technology, have even developed **work-based curricula** where students must complete different work requirements for each advancing semester (Oloroso 39).

ALTERNATIVE MODELS

The 1990s is full of "new" models and designs which attempt to meet the need for developing relevant work place skills. Quinnipiac College in Hamden Connecticut, attempts to maintain academic excellence while stressing practical learning. Within its structure is The Murray Lender School of Business. Its mission includes a commitment to fostering entrepreneurial spirit, interactive learning, and developing interpersonal skills. Listed among the learning objectives are analysis and problem solving, interpersonal relations, and cultural sensitivity (109).

The Ed McMahon School of Communication Arts and Sciences, also at Quinnipiac, stresses a balanced approach which simultaneously develops technical skills and an understanding of the artistic, historical and theoretical traditions (154).

Another model worth mention is the Audry C. Cohen College for Human Services in New York City. Their belief is that students learn best when they can see the connection between what they are learning and its application to the real world, and that "what they have learned in school can make a positive change in the community" (3). Besides an orientation toward the *global service economy*, focus is directed toward three points: internships, constructive actions (usually team, community focused projects), and "teaching by dimensions." The five dimensions are identified as: values, self and others (diversity and knowledge of self), knowledge of systems, and technical skills (9-0).

TOWARD A SYNTHETIC, HOLISTIC MODEL DESIGN

THE INTEGRATED LEARNING SYSTEM

For educational institutions and employing organizations, challenges proliferate in developing students to meet the changes and demands of the new workplace. As transition from school to work becomes more difficult, it is essential to develop systems that promote learning within educational and work contexts. While current the experience-based programs noted above, such as cooperative education, internships, and vocational training have been successful to a point, they have not fully met the challenge of preparing students for the 21st century workplace and society.

"If jobs in reengineered processes require that people do not follow rules, but rather that they exercise judgement in order to do the right thing, then employees need sufficient education so that they can discern for themselves what the right thing is" (Hammer & Champy 71). *Training* increases the "how to" aspects of work; but *education* teaches the "why," so that workers can solve problems on their own. Traditionally, higher education institutions concentrated on the theoretical "why's" of knowledge, leaving the "how to's" to vocational, business, and technical schools. Today, however, the need is for an integration of knowledges into a *holistic learning system*. This is the nature of the **third transformation of American education**.

The challenge facing higher education now becomes how to: **explore new**

strategies to maximize the quality, effectiveness, and reach of existing experiential programs; **design an integrated learning structure** to effectively extend curricula while increasing career preparation and learning opportunities for students; **create a system** that links elementary, intermediate, and secondary schools with junior and senior colleges and employing organizations into an organic network which continuously assesses workplace conditions and prepares students to meet the challenges of high performance environments (Demetriou, Ortiz & Ganz).

The "*Integrated Learning System*" (ILS) which was developed at Queens College of The City University of New York, is the result of a collaborative effort of three different perspectives as represented by: Sophia Demetriou, a specialist in experiential college learning programs; Randolph Ortiz (the current author) a specialist in corporate education and *workforce readiness*; and Samuel Ganz, former U.S. Under-Secretary of Labor and New York City Commissioner of Manpower. The system was designed to meet: (1) the special needs of a highly diverse student population unprepared for professional careers in American and global workplaces; (2) the 21st century economy's need for an American workforce which requires the knowledge, skills, abilities, and competencies to perform in an increasingly complex market; and (3) the need to educate and prepare students for the informed, responsible exercise of their civic rights and responsibilities.

ILS will realize this vision by reengineering existing school to work paradigms into an innovative, multifaceted, competency-focused career development process designed to respond directly to these *workforce readiness* challenges by preparing students

for the complexities of rapidly changing economic, social and work environments. ILS accomplishes this by engineering a new "experiential architecture" that extends beyond traditional school to work educational paradigms where competencies are usually not assessed. The new model successfully integrates academic education with quality training and practical learning to maximize the potential for success for the student entering the workforce. The *System* provides students with a dynamic interdisciplinary process that facilitates completion of educational goals and development of occupational skills. It also increases job-related competencies, and encourages professional maturity through career management.

SYSTEM DESIGN -- COLLEGE

The blueprint of the college model delineates a comprehensive, holistic system of 3 interlocking Process Activities (knowledge acquisition, skills development, career management) aligned with 4 primary Professional Career Tracks (health, finance, information technology, professional services -- see appendix, pp. A-3,4); incorporated into 3 Learning Tiers (basic, intermediate, and advanced). The system is constructed on a foundation which is grounded in **diversity** in its broadest sense. Ethnic and cultural diversity offer contexts wherein issues of leadership, teamwork, empowerment, and individual responsibility are examined as strategic elements for organizational, community, and individual success. All Learning Tiers involve core courses, skills workshops, career seminars and work experience that are tier-topic and career-track focused. Core courses present theoretical material; the skills workshops translate theory

into action steps and tools, and provide "virtual laboratories" to develop and practice in a safe environment; the career management seminars offer insight into the mechanics of work environments and suggest effective strategies for the use of the tools; and work experience provides "real world environments" in which students synthesize and transform learning and skills into competencies. Completion of a Learning Tier will require assessment. Assessment tools evaluate competencies (human services, cognitive, managerial/leadership, personal effectiveness etc.) and predict job performance levels. Students who need additional development to reach competency levels for each Tier, are required to take self-paced remediation (with guidance) for reassessment and advancement to the next Tier (see appendix A-1 for course, workshop, and seminar titles and their distribution across the three learning tiers).

Core Academic Courses -- These courses address theoretical concepts and offer insights into the intellectual and business rationale for the value of understanding and leveraging diversity. The core courses educate students to the implications of diversity in the workplace and society. In addition, these courses heighten awareness of social differences within cultural contexts so that students are sensitized to the political, economic, and social implications of diversity as well as the need for valuing difference - especially in the expanding high-tech, competitive global marketplace. The courses explore strategies such as interdependence and individual empowerment as effective methods of operation in this emerging arena. Finally, these courses offer the theoretical rationale for the practical techniques and tools to be taught and experienced in the workshops and seminars.

Skills Development Workshops -- These workshops provide a vehicle for translating core course concepts and issues into practical action tools for implementation in workplace situations. The sessions engage students in identifying and sharing their individual and cultural value systems (including perceptions, assumptions, beliefs and biases). The workshops, while developing skills, offer contexts for comparative analysis of varying cultural points of view regarding time, space, communication (verbal and non-verbal), work ethic, lifestyle, and motivation. Through open discussions, role plays, structured experiential situations, and team projects, students are challenged to negotiate through their differences and arrive at effective solutions to work problems. The process encourage students to learn and benefit from each other's strengths and demonstrate how collaborative involvement and action yields synergistic results. In addition, students learn high performance techniques such as quality statistical analysis and advanced research methods which employ Internet, World Wide Web, and other computer-aided venues.

Career Management Seminars -- These seminars provide company and industry specific information, market trends, occupation information, and exploration opportunities, as well as career, education and life planning strategies. Counseling and advisement are integral elements of this component in the system.

Work Experience -- This is aligned to each Learning Tier in order to broaden knowledge by concretely relating Tier subject matter to workplace demands and work skills acquisition to professional development. Work experience is developed to meet the needs and interests of each student. A combination of customized services is provided

including: placement guidance, individualized career counseling, and close monitoring of each student's learning and work performance.

Pre & Post Workshops -- A preliminary orientation workshop: *Introduction to the World of Work* is required of all students as prerequisite for entry into the system. A summary workshop: *Work & Learning: Making the Connection* synthesizes the major learning and skills development components into a career **action plan** that effectively aligns individual goals with organizational and industry requirements.

Individualized Student Profile -- counselors coordinate the preparation of an individual student profile that reflects the performance feedback as assessed by the employer, the mentor, the advisers, and evaluation instruments. This profile is used by the student and the advisor to help develop an individualized career action plan.

Credentialing -- A certificate of mastery is granted upon completion of ILS.

SYSTEM DESIGN -- K-12

The elementary and secondary school models provide rudimentary skills training, fundamental instruction in diversity and team concepts, introductory awareness of career choices and career management techniques. The development and implementation of ILS provides students with a bridge to connect all levels of the education and career development process. Work-based learning is also integrated into the K-12 curriculum. Students are exposed to work-a-day experience through job shadowing opportunities, employer involvement in the classroom, and community service learning projects. This "world of work" bridge motivates students to perform and achieve higher levels of

academic excellence. The connection also encourages feelings of empowerment leading to the higher levels of self-efficacy necessary for success. The K-16 "experience" thereby embodies and promotes the notion of education as a lifelong learning process.

HUMAN AND MATERIAL RESOURCES

- **faculty:** The faculty team of instructors/advisers is recruited and prepared to deliver instruction, training, advisement and mentorship to all student participants so that the notion of an organic, interrelated learning process is reenforced throughout the System. The faculty team, with the advice and participation of representative employers manages ILS in terms of its organization, operating methodology, and administration.

- **students:** Recruitment and selection priority is given to those students with greater need for ILS, including the economically disadvantaged, immigrants, women, the physically challenged and returning adults.

- **material resources:** Core course curricula, competency assessment tools, skills development workshops, and career management seminars are designed specifically for the System. In addition, the System employs various high technology learning media such as: teleconferencing/distance learning, self-paced instruction tools, computer-based instruction, and the implementation of a virtual classroom. Off-site learning environments such as corporate classrooms are also used for the Skills Development Workshops.

- **networks:** An **internal collaboration network** is established with academic departments and faculty and is used implemented as an ILS College Advisory Committee.

An **external collaboration network** (Employer Advisory Board) includes employer representatives from influential organizations who provide advice, industry/career forecasts, curricula content input and work experience for participating students.

- **scheduling:** A variety of program delivery options are available, owing to the diversity of student needs and employment and family responsibilities (see appendix A-2 for description of program options).

SYSTEM EVALUATION AND SELF-REGULATION

A comprehensive evaluation mechanism based on system self-regulation is built into ILS. This process is an inherent and critical component to the concept of systematic and ongoing testing and performance assessment. The principles of self-observation, self-evaluation and modification exemplifies the organic nature of ILS and its mission of fostering accountability, competency, flexibility and adaptability to change.

The ILS leadership along with the Advisory Board has established quality performance standards. Methodologies to determine levels of compliance to these standards supply both quantitative and qualitative information. The process includes: maintenance of a database containing student, employer, and system demographics and performance data; scheduled status reports from students, employers, and staff; formal evaluations by employers regarding the student performance and ILS effectiveness; and continuous interconnectivity which fosters dialogue among the various participants within the system (students, staff members, employers, and the college). The process creates **multiple feedback loops** which allow ILS to facilitate an "intimacy" between the

workplace and the college. The process also provides material for longitudinal analyses, research and targeted measurements of the various ILS components; along with comprehensive year-end student, employer, work experience, and system appraisals and performance evaluations.

To insure the integrity of the system and its components, ILS on a periodic basis, retains the services of independent auditors. Finally, the Employer Advisory Board and ILS leadership is evolving into a *Quality Council* which will monitor the evaluation process and supply intervention as needed.

V

THE ROLE OF TECHNOLOGY ON FUTURE LEARNING

It is unclear what will constitute future transformations in education. The fact, however, that technology will play the dominant role in that process, is clear as crystal. Distance learning options have already facilitated strong alliances between business and schools. Video and audio telecommunications and computer networks are being installed and activated on a daily basis. Distance learning centers such as the NYNEX operation in White Plains N.Y., and the University of Wisconsin's distance education clearing house in Madison, are emerging constantly. Whether these work more effectively than traditional classrooms has yet to be determined. Some statistics show that students trained through distant learning constantly score higher than students who attend traditional classroom/lecture sessions (Leonard 43). Theories for the phenomena however, have not discounted the possibility that the novelty of the new techniques has contributed to student motivation. Be that as it may, high-tech distance learning techniques are here to stay.

A challenge to traditional teacher's roles is eminent. With so many options like videoconferencing, interactive television, multimedia, CD-ROMs, and the internet, the role of many teachers will have to change to include exercise of facilitation skills. In the corporate world, the trainer is evolving into someone who "facilitates, mentors, and guides employers and employees to the best and most timely training available" (Leonard 41). Trainers and education consultants will become experts in locating, interpreting and

assessing a wide range to employee development options (including university alliances). For the school educator, the challenge will be to establish a "structure for exploration, " (Geiger 5) an encouraging environment where learning emerges from the interactions between teachers, students, and technology.

Finally, as was highlighted several times in this paper, the diversity of new student populations, with regard to culture, age, sex, etc., and their multiplicity of roles as students, workers, and family members, will require a new breed of teachers. Teachers must be open minded, and flexible as well as technologically resourceful in order to facilitate the distance learning and **virtual classrooms** of progressive processes such as the *Integrated Learning System* and *Universities Without Walls*.

VI

SUMMARY

Education is a social institution with connections and interdependencies which link it to the greater social system we know as society. The role of education as an institutional subsystem is to reflect the dominant social structure and provide a means for conditioning individuals to conform to the value orientation of the society. This process, known as socialization, states that it is the responsibility of all individuals to become *productive* members of society. In order to fulfill one's responsibilities in western society, one must enter into and participate in "the world of work." Thus, a major defacto function of education is to prepare the individual for this "world of work."

In the early decades of modern western society, the role of education was, for the most part, performed within the *family*. This process was brought to America and became the norm with farmers as well as townspeople. After the American Civil War, however, American economic production shifted its focus from agriculture to manufacturing. A labor force had to be developed to meet the need of a rapidly expanding, bureaucratically structured, industry based economy that required not only trained blue collar workers, but a large (and growing) population of white collar administrators, clerks, secretaries, analysts etc. These factors, along with other social changes including mass immigration and compulsory education laws produced a gap between what was needed from the institution of education and what it was producing. In order to meet the challenges of the changing economic and social structure, the educational system underwent a *transformation*. From this transformation a new type of

secondary school structure, known as the *terminal high school* emerged as an alternative to the traditional, elite preparatory schools and academies. Teacher roles changed. Different skill sets and delivery methodologies were needed to accommodate this new school structure.

By the mid 1960s, a *second transformation* of the American education process was well under way, this time to meet the demand for the skilled technical, professional and managerial workforce that grew between 1940 and 1960. Enrollment in post secondary education increased to keep pace with the need. Students, however were not prepared for the demands of higher education and a gap developed between what colleges required from students and the skill sets learned in the mass terminal high school system. The system had to be reconstructed into a mass preparatory system. Teacher requirements again changed. With a curriculum that demanded more focus on mathematics and physical sciences, teachers had to broaden and deepen their knowledge of these subjects. The quality of students' written and oral communication skills also needed improvement.

In the 1990s, the same social forces that were at work in the past are actively reshaping the world. We are faced with several shifts in the operation of society. The emergence of a *global economy*, the shifting of America's economic focus from industry to service, the rapid growth of technology, and the massive increase in the college population, have produced a gap which may be wider than those of previous years. Deficiencies in the educational process have been identified by both public and private sector studies such as the University of Pennsylvania's Wharton School Study, and

and role playing are the most effective techniques for learning. So, even though teacher's future roles are unclear, the notion of teacher as facilitator, guide, mentor, coach, and counselor seems to be emerging as the appropriate educator philosophy for this *third transformation*.

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APPENDIX

INTEGRATED LEARNING SYSTEM

LEARNING TIERS MODEL

Recruitment Selection
Enrollment of Students



**ORIENTATION
WORKSHOP**
*Introduction to the
World of Work*

- ◆ Prerequisite Workshop for Learning Tiers
- ◆ Overview: Philosophical, Procedural *Architecture* of the System
- ◆ Introduction To Topics, Issues, etc.
- ◆ Initial Assessment: Interest Inventory of Students to Determine Professional Career Tracks
- ◆ Preliminary Career Preparation of the Students, (résumé, interview, job search skills)

LEARNING TIER I *Basic*

- Core Courses**
 - ◆ Understanding Work Place Diversity and Global Economy
- Skills Development Workshops**
 - ◆ Time Management
 - ◆ Interpersonal Relations in the Workplace
 - ◆ Professional and Business Writing
 - ◆ Stress Management
- Career Management Seminars**
 - ◆ Learning Tier and Track Focused
- Work Experience**
 - ◆ Will be aligned to Tier Learning Objectives and Focused on the Development and Application of Tier Competencies
- Competency Assessment**
 - ◆ Evaluation of Tier Learning and Skills Acquisition

LEARNING TIER II *Intermediate*

- ◆ Leadership, Teams, Partnerships, and Networks
- ◆ Analytical Problem Solving
- ◆ Communication Skills for Solving Organizational Problems
- ◆ Presentation Skills
- ◆ Understanding, Coping, and Managing Change
- ◆ Learning Tier and Track Focused
- ◆ Will be aligned to Tier Learning Objectives and Focused on the Development and Application of Tier Competencies
- ◆ Evaluation of Tier Learning and Skills Acquisition

LEARNING TIER III *Advanced*

- ◆ Leveraging Diversity Through Conflict Resolution
- ◆ Project Management and Strategic Planning
- ◆ Negotiating Skills
- ◆ Consulting and Facilitating Skills
- ◆ High Performance Techniques
- ◆ Learning Tier and Track Focused
- ◆ Will be aligned to Tier Learning Objectives and Focused on the Development and Application of Tier Competencies
- ◆ Evaluation of Tier Learning and Skills Acquisition

**SUMMARY
WORKSHOP**
*Work and Learning:
Making the Connection*

- Workshop content to include:**
- ◆ Synthesis of Learning and Skills Development Components
 - ◆ Design of Personalized Career *Action Plan*
 - ◆ Credentialling

INTEGRATED LEARNING SYSTEM

DELIVERY OPTIONS

SUMMARY WORKSHOP
Work and Learning: Making the Connection

LEARNING TIER III
Advanced

LEARNING TIER II
Intermediate

LEARNING TIER I
Basic

Recruitment Selection
 Enrollment of Students



ORIENTATION WORKSHOP
Introduction to the World of Work
 (1 Credit)

- ◆ **Option A:**
 1 Hour per week for 15 weeks (day/evening)
- ◆ **Option B:**
 3, 6 Hour Saturday Sessions (day/evening)
- ◆ **Option C:**
 3, 6 Hour Sessions in January or summer (day/evening)

Core Courses	◆ 3 Departmental Credits for each Learning Tier
Skills Development Workshops (25 Hours)	◆ Option A: 2 Hours per week for 12 weeks (day/evening) <i>or</i> ◆ Option B: 5, 5 Hour Saturdays <i>or</i> ◆ Option C: 2 Weekends (Friday thru Sunday)
Career Management Seminars (5 Hours)	◆ 5, 1 Hour Sessions 2 Credits per Learning Tier (Workshops plus Seminars)
Work Experience (10-35 hours/week)	◆ Track Specific Career Positions will be offered
Competency Assessment	◆ Upon completion of work experience for each Learning Tier

- ◆ **Option A:**
 1 Weekend
- ◆ **Option B:**
 2 Saturdays
- ◆ **Option C:**
 2, 6 Hour Sessions in January or June
- ◆ **Credentialling**

INTEGRATED LEARNING SYSTEM

CAREER TRACK ALIGNMENT



NOTE: Tier *Career Management Seminars* and *Work Experience* are aligned to each Career Track.

INTEGRATED LEARNING SYSTEM

CAREER TRACK OCCUPATIONS

	FINANCE	HEALTH	INFO TECHNOLOGY	CONSUMER SERVICE
UNDERGRADUATE	<p>Teller Bookkeeper Management Intern Actuarial Assistant Assistant to Broker Assistant Customs Inspector Claims Representative Payroll/Billing Clerk Accounting Assistant</p>	<p>Physical Therapist Aide Outreach Worker Social Services Assistant Health Plan Assistant Community Health Educator Pharmacy Intern Recreation Assistant Medical Technology Intern Substance Abuse Councilor Intern Research/Lab Assistant</p>	<p>Data Entry Clerk Programming Assistant Help Desk Rep Hardware/Software/Electronic Technician Production Assistant Graphic Artist Assistant News/Editorial/Copywriting Assistant A/V Operator/Technician Library Assistant Marketing Assistant</p>	<p>Sales Clerk Telephone Operator Benefits Assistant Customer Relations Associate Telemarketing Rep Secretary/Receptionist Food/Beverage Employer Hotel/Motel Management Trainee Culinary Assistant Human Resource Management Trainee</p>
BA/BS	<p>Accountant/Auditor Appraiser Assistant Comptroller Broker Financial Planner Actuary Customs Inspector Loan Officer Insurance Agent Analyst (Cost;Credit)</p>	<p>Crisis Intervention Specialist Case Worker Patient Relations Rep Medical Health Assistant Lab Technician Health Plan Specialist Health Services Administrator Hygienist Therapist Dietician Technologist EMT</p>	<p>Graphic Artist / Illustrator Computer Operator Programmer/Systems Analyst Camera Operator Service Engineer Area Network Engineer/ Consultant Broadcast/ Production Technician Library Technician Editor/Journalist Script Writer</p>	<p>Sales Rep (Retail, Tech, etc.) Customer Service Rep Benefits Coordinator Employment Specialist Food/Beverage Manager Human Resource Trainer Retail Floor Manager Service Coordinator Manager Translator/Interpreter Marketing Planner Analyst</p>
PROFESSIONAL	<p>C.P.A. Investment Banker Bank Examiner Comptroller/CFO Bank Manager Real Estate Broker Estate Planner Revenue Agent Economist Underwriter Financial Analyst</p>	<p>RN Social Worker (MSW/CSW) Physician/Dentist Physician Assistant Therapist (Occupational/Physical) Pharmacist Pathologist/Biomedical Engineer Counselor Psychologist Speech Pathologist Hospital Administrator</p>	<p>Technical Writer Chief Information Officer Broadcast Engineer Radio/TV Director TV Technical Director Studio Engineer Computer Design Engineer Project Manager Photographer/ Photo Journalist Librarian</p>	<p>Head Hunter Sales Executive Customer Relations Manager Employer Relations Consultant Buyer Hotel/Motel Manager Chef/Maitre D'/Food/ Beverage Director Education Consultant Industrial/Organizational Psychologist Consultant Sales/Service Managers</p>