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A COMPARATIVE STUDY OF HUMANISM AND PRAGMATISM AS THEY RELATE TO DECISION MAKING IN INSTRUCTIONAL DEVELOPMENT PROCESSES

By

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ABSTRACT

A COMPARATIVE STUDY OF HUMANISM AND PRAGMATISM
AS THEY RELATE TO DECISION MAKING
IN INSTRUCTIONAL DEVELOPMENT PROCESSES

By

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This is an exploratory study aimed at discovering some of the philosophical assumptions that may undergird the conceptual framework of instructional development as a subset of educational technology. It sought to answer the question whether a philosophical investigation of instructional practices would provide a framework for enabling instructional developers to make better and more consistent decisions.

Given that instructional developers possess a personal philosophy and a composite statement based on personal beliefs and attitudes, this study is directed at finding the implications of an instructional developer using a philosophical position as a device to filter instructional development decisions.

It was assumed that consistency in decision making with a philosophical position could not only affect

instructional development systems, but also provide a conceptual framework for theory building in educational technology.

To achieve this purpose, a philosophical investigation was initiated in which the twenty-four decision points of the Instructional Development Institute (IDI) Model were examined individually from the philosophies of Pragmatism as advocated by Charles Peirce and William James, and of Humanism, as advanced by Abraham Maslow and Jacques Maritain.

Since the twenty-four decision 'points' are more aptly described as decision processes, example decision points were generated for each process as specific questions that an instructional developer would typically respond to. These were examined from the pragmatist and humanist viewpoints; illustrative examples were added and congruences (agree or disagree) variabilities (agree with reservation), and empty sets (questions not responded to by the two philosophies) of the philosophical views with each of these decision points were recorded.

It was found that a pragmatist would make instructional development decisions mostly similar to the ones contained in the twenty-four decision processes of the IDI Model. The humanists would make decisions, sometimes similar to those in the IDI Model, but in a large number of cases

would either agree in a guarded fashion, or even reject them. The analysis did not, however, state whether these differently conformed systems performed with any significant difference in terms of their respective effects on learners.

This study could be viewed as a first in a series of more refined and incisive studies yet to be undertaken.

To John and Mary Luiz

To C.S. and I.M.,

Who need not read this study

To realize how indebted I am

For their gift of life and love.

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CHAPTER I

PURPOSE OF THE STUDY

The present research is an exploratory study aimed at discovering some of the philosophical assumptions that may undergird the conceptual framework of instructional development which forms part of educational technology.

This study seeks to investigate the feasibility of a fresh methodological approach through which a specific instructional development process will be examined from two philosophical perspectives, i.e., Humanism and Pragmatism. Such a comparative study, it is hoped, would reveal either the presence or the absence, in varying degrees, of a discernible strain of philosophical thought inherent in such instructional processes, programs and policies. A conscious disclosure of uninvestigated and unsuspected ideological leanings may contribute to areas of meaningful theory-building and research by educational technologists.

This chapter is designed to provide the background for initiating such a study.

DEFINING EDUCATIONAL TECHNOLOGY

In 1972, the Association for Educational Communications and technology (AECT) issued a statement defining the field of Educational Technology:

> Educational technology is a field involved in the facilitation of human learning through the systematic identification, development, organization, and utilization of a full range of learning resources, and through the management of these processes. It includes, but is not limited to, the development of instructional systems, the identification of existing resources, the delivery of resources to learners, and the management of these processes and the people who perform them.[1]

Donald P. Ely, chairman of the Definition and Terminology Committee, AECT, ascribed this final formulation of the field of educational technology to a group of experts like Kenneth Silber, Kenneth Norberg, Geoffrey Squires, Gerald M. Torkelson, Robert Heinich, Charles F. Hoban, Jr., Wesley Meierhenry, and more than 100 members of the AECT who participated in its open hearings.[2] This list constituted the cream of top-level professionals in the field of educational technology who had been pioneers and guiding spirits in the gradual emergence of a profession that sought to answer the question, "what field are we in?"[3] For a relatively young profession that began as "audiovisual instruction," was then renamed instructional technology, and, finally, came to be known as educational technology, this search for identity has remained an agonizing process.

QUEST FOR PROFESSIONAL IDENTITY

The quest for professional identity has been one of the main preoccupations of the proponents of educational technology. In the very first issue of AV Communication Review (1953), the new research journal of the Department of Audio-Visual Instruction (DAVI), James D. Finn examined the characteristics of a profession.

> A profession has, at least, these characteristics: (a) an intellectual technique, (b) an application of that technique to the practical affairs of man, (c) a period of long training necessary before entering the profession, (d) an association of the members of the profession into a closely-knit group with high quality of communication between members, (e) a series of standards and a statement of ethics which is enforced, and (f) an organized body of intellectual theory constantly expanding by research.[4]

Recognized nationally and internationally as an authority on instructional technology, Finn had, throughout his professional life, demonstrated his commitment to education and to this growing field of specialty which sought to extend education into an age of technology. He explored the impact, implications, and consequences of technology that was revolutionizing education and paralleled these efforts by challenging, goading, attacking, and, occasionally, indicting the academic establishment in a scholarly concern for professionalizing the field.

For Finn, philosophizing was an essential component if one were to go beyond the expedient.[5]

Examining the status of audiovisual education through

the application of the six tests of a profession, Finn found that audiovisual personnel did have (a) an intellectual technique, and that they competently met the test of (b) application of technique to practice. The requirement of (c) a long period of training as a necessity for professionalization was not met at all, while (d) an association of members with high quality of communication, and (e) a code of standards and ethics did exist, but functioned inadequately. On the test of (f) an organized body of intellectual theory constantly expanding by research, audiovisual education rated such low scores that failure was the only possible grade.[6]

The prognosis? Everything added up, "in the opinion of the writer, to the simply stated fact that the audiovisual field is not yet a profession."[7]

NEED FOR SYSTEMATIC THEORY AND RESEARCH

For Finn, the "most fundamental and most important characteristic of a profession"[8] was the sixth and the last--that the technique of a profession is founded upon a body of systematic theory and research constantly being expanded by research and thinking within the profession. This was a serious lacuna in the profession and may have been the result when audiovisual personnel seeking to apply the fruits of technology to the educational process began to place a premium on "practicality" while eschewing the "theoretical."

In 1977, Gerald Torkelson examined major articles, research abstracts, book reviews, etc., that were published in the AV Communication Review, with regard to the evolution of theory and research in the profession and passed his own verdict: "We have a body of theory, but, I would argue, not organized and integrated to provide bases for judging the relative merits of theories nor for organizing future inquiry on any agreed-upon path."[9]

Alfred North Whitehead once said:

> . . . The practice of a profession cannot be disjoined from its theoretical understanding and vice versa ... The antithesis to a profession is the avocation based upon customary activities and modified by the trial and error of individual practice.[10]

Excepting three studies, Finn found that theoretical formulations in audiovisual education lacked both depth and direction. Much of the professional inadequacies like the scarcity of intellectually stimulating content both at meetings and in journals was traceable to a lack of theoretical direction.

> Without a theory which produces hypotheses for research, there can be no expanding of knowledge and technique. And without a constant attempt to assess practice so that the theoretical implications may be teased out, there can be no assurance that we will ever have a theory or that our practice will make sense.[11]

AECT DEFINES EDUCATIONAL TECHNOLOGY

Twenty-five years after James Finn had made the assessment and found the instructional technology field

wanting as a profession, the AECT Task Force of Definition and Terminology in 1977, after a 14-year study, published Educational Technology: Definition and Glossary of Terms,[12] a monumental work, which was appropriately dedicated to "James D. Finn and Sidney C. Eboch..." The Association for Educational Communications and Technology officially endorsed the definition (Part A) of Educational Technology and the process through which the Glossary (Part B) was developed. It was resolved that educational technology, as a theoretical construct, as a field, and as a profession met all the criteria, first postulated by Finn and later amplified to be more inclusive, and that the people engaged in this profession might be called "educational technologists."[13]

Although the AECT publication was based on a new conceptual framework which was the "best available at the time,"[14] it also recognized the validity of other theoretical frameworks and pledged continuous re-evaluations to reflect changing concepts, terminology, and definitions.

THE PROBLEM

Even after sixty years of growth and progress, educational technology as a profession, despite some strong theoretical advances which were grounded in research, looks still for a definitive maturation in an integrative and unifying philosophy.

After having examined Dewey's educational progressivism with its cognitive-developmental psychology, Kohlberg and Mayer concluded that the developmental definition of educational aims and processes require both the method of philosophy or ethics and the method of psychology or science. "The justification of education as development requires a philosophic statement explaining why a higher stage is a better or more adequate stage."[15] Bass, Lumsden, and Dills disagreed saying that there was no valid reason to believe this claim that the lack of impact through instructional development is rooted in a basic deficiency in the conceptual underpinnings of our technology.[16] Rare is the single study that has direct application to instructional practices, William Winn stated, as he studied the distinction between basic research, that has the primary aim of building theory, and applied research, that aims at solving immediate practical problems. His conclusion: it is unwise and unnecessary to sever theory from practice.[17] The 1979 Lake Okoboji Leadership Conference examined how educational technology could be promoted and found that one of the major problems confronting educational technologists is the fact that the research upon which "the organized body of knowledge" is based is fragmentary and sometimes contradictory.[18] Since theory, in a general sense, is a synthesis of observations of relationships, it said that "a researcher's philosophy regarding how people

register sensory impressions may guide his quest for explanations."[19]

As James Finn wistfully remarked, "somehow, somebody, someday is going to figure out how to put these things together into a fairly useful order of instruction to solve specific problems."[20] Will such a philosophy, if ever, come into being?

RATIONALE OF THE STUDY

The AECT as a professional organization of educational technologists acknowledges the viability as well as the desirability of other conceptual frameworks which would seek to establish its professional identity, especially in its fundamental task of building up a body of systematic theory and research which, in turn, would advance the facilitation of learning. "To improve learning," said David Hawkridge, "educational technologists require a stronger repertoire than they have now. There has been considerable confusion ... because educational technologists have been eclectic without taking the trouble to understand the sources they have exploited."[21] Educational technology has drawn and continues to draw from various sources and disciplines and, despite occasional predilections and avowed preferences to certain learning theories, practice and research tendencies, remains essentially an open system, permeable to unifying inputs from the world of education, communication and technology.

The question may now be asked: will a philosophical investigation of educational and instructional practices and techniques prove to be a fruitful undertaking which will provide a framework that enables instructional developers to make better and more consistent decisions? Before one affirms its justifiable viability, we need to understand what a philosophical inquiry involves.

SEARCH FOR PHILOSOPHY

The roots of any science can be traced back into philosophy. The seminal ideas contained in the writings of Greek philosophers became through the efforts of later generations of thinkers the central ideas of western philosophy and science.

> While such searching for philosophical roots can take on the nature of a rather pointless academic game, and while it is often the case that such procedures are used to legitimize rather poorly thought-out ideas, it is, nevertheless, true that it is very often difficult to understand why a particular scientific theory was formulated without understanding its philosophical origins.[22]

Aristotle once remarked that everyone adheres to a philosophy whether he or she is aware of it or not. The guiding pattern in the life of every person is his or her philosophy, or his or her "inarticulate major premises" as Justice Oliver Wendell Holmes once put it.[23]

Donald Ely, who observed that the use of the word 'philosophy' in this sense of personal attitudes and

convictions would dilute its original intent, found it, nevertheless, a useful point of departure. He acknowledged that it is only right that there should be a philosophy of instructional technology and that it should vary from individual to individual. According to Ely, such a philosophy, although autobiographical in nature, is a "composite statement based on beliefs, concepts and attitudes from which personal purpose and direction are derived."[24]

As a developed study and discipline, philosophy has for its purpose the analysis and clarification of human aims and actions, problems and ideals. As a synthesis, philosophy attempts to work out a correct and integrated view of the universe, human nature, and society.

"Philosophy is the establishment of coherent meaning in the whole domain of thought," wrote Susanne Langer.[25]

The domain of thought might vary according to the scope of people's factual knowledge and the range of their imagination. When it is predominantly factual, verifiable propositions logically strung together may generate science; theological beliefs could result from speculations on a core of personal and social values.

ROLE OF PHILOSOPHY

Whatever be the outcome, the establishment of coherent meanings is not a simple process which would be achieved through logical analysis from a set of premises that are

situated or invented in vacuo. The function of the philosopher is to draw from major branches of various disciplines the data and premises that are particularly relevant to problems, broad generalizations and audacious syntheses. The philosopher should weave back and forth between fact and theory to be objective in conclusion and faithful to the rigors of logic.

A 'REAL' PERSONAL PHILOSOPHY

A lived-in experience, a substratum of commonsense notions which are analyzed, and basic concepts that are endowed with adequate meanings should trigger off the initial thought processes. Through progressive elaboration and articulation, a philosophical thinker would be able to establish coherent meanings, but his point of departure remains a field that is real.

It is in an experiential world of lived realities that many a 'personal philosophy' finds its locus which, in turn, provides a personalized perspective of viewing and understanding the environment. Gilbert K. Chesterton once stated that the most practical and important thing about a man was still his view of the universe. It is important for a general, who is about to fight an enemy, to know the enemy's numbers, but still more important for him to know the enemy's philosophy. Quoting Chesterton in his lecture delivered at the Lowell Institute in Boston on November 14,

1906, William James stated:

> I think with Mr. Chesterton in this matter. I know that you, Ladies and Gentlemen, have a philosophy, each and all of you, and the most interesting and important thing about it is the way in which it determines the perspectives in your several worlds.[26]

Since the goal of every branch of education is to facilitate and improve the quality of human learning, "the uniqueness of educational technology, and, therefore, its reason for being, lies in the philosophical and practical approach it takes toward fulfilling this purpose."[27]

WHY PRAGMATISM AND HUMANISM?

Pragmatism

The origins of pragmatism are clear in broad outline, but obscure in fine detail. According to Charles Sanders Peirce and William James, two strong advocates for pragmatism, certain elements of this philosophy are traceable to the thinking and writing of Socrates, Aristotle, Berkeley, Hume, Kant and others. The major intellectual contributions to American pragmatism were provided by Peirce, when he presented his theory of meaning in the 1870s; it was revived primarily as a theory of truth by James in 1898; it was further developed, expanded and explained variously by John Dewey and F.C.S. Schiller.

Pragmatism became, at the turn of the century, the most influential philosophy in America, and as a movement

characterized a stout stand against the intellectual currents and other idealisms that were then shaping America.

> It is as a movement--both critical of much of traditional philosophy and concerned to establish certain positive aims--that pragmatism is best understood. It is in this respect, rather than by any exclusive doctrine, that pragmatism became the major contribution of America to the world of philosophy.[28]

An incipient pragmatism can be easily discovered in the last century threading the fabric of American social experience: the founding of schools in the Colonies, the opening of the West, and the origins of public education. The rapid expansion of industry and trade coupled with a popular optimism that had its roots in Puritan theology provided a social ethos which intensely believed that virtue and hard work are bound to be rewarded.

As a body of ideas, pragmatism contributed a heritage to the American way of life: interpretation of thought and meaning as forms of purposive behavior, of knowledge as evaluative procedure in which normative and descriptive materials are integrally related, and of the logic of scientific inquiry as a norm of conduct. In its attempt to understand humankind and the human society, pragmatism "orders" the experienced world. As a result, a large segment of American society has accepted the principles of relativism, cooperation, problem solving, and pluralism, as well as exhibits a concern for all actions and their consequences.

> There are good reasons for believing that Pragmatism represent an indigenous American outlook on life and the world. Or, perhaps, to avoid any hint of jingoism, it would be more satisfactory to say that Pragmatism sums up beliefs and attitudes which have shaped the development of America as the many-sided phenomenon which it is--a people of peoples, a vast enterprise of industrial technology and the locus of multi-levelled experiment in representative government.[29]

If pragmatism is a definitive American phenomenon, it was in the sphere of education that it began to exert its considerable influence and contributed to progressive developments which resulted in the U.S. education breaking away from the overtly intellectual moorings of its European heritage.

> Education is a primary concern of the pragmatist, and the concepts of utility, progress, democracy, and technology are crucial to the pragmatic view of education. The pragmatist asserts that the process of education is learning to reconstruct one's experience intelligently. The child, rather than subject matter, is considered central to education, and the child's interests.[30]

It may be said that, as a single movement, pragmatism is no longer extant; but as a body of ideas, it makes a considerable impact on American life and education. Its pervasive symbiotic relationship with educational technology has not been plumbed, but the veins of educational thought and practice, unacknowledged and unspoken, may still throb with pragmatic blood.

While one might be at perfect liberty to apply any philosophy to instructional development practices to

examine the philosophical theories that considerably characterize an educational program, it was deemed advisable to employ pragmatism for these reasons already mentioned above: (1) it is a modern philosophy, (2) rooted in American educational system, and (3) interlinked with contemporary concerns.

Humanism

With the increasing introduction of technology in the educational arena, a phenomenon that still continues unabated, discord, disenchantment and dissenting voices are heard in the hallowed halls of educational establishment. One is thrilled with the exciting possibilities that technology offers, but there seems to emerge a gnawing suspicion that a technological revolution in classrooms may not lead future generations in desired directions, whatever be indicated as the ideal direction. If, in instructional technology, learning is "purposive and controlled," the factors that lead to controlled learning, it is feared in some circles, may tend to "dehumanize" education. James Finn zeroed into this problem when he wrote:

> ... Instructional technology is, no doubt, here to stay. Our problem becomes one, not so much of how to live with it on some kind of feather-bedding basis, but how to control it so that the proper objectives of education may be served and the human being remain central in that process.[31]

The centrality of human being in a world he or she creates is the concern of humanism. Albert Levi defined

humanism, in the broadest sense, as simply the "quest for value". He elaborated this quest for value as

> all that opposes the specifically human to a 'transcendence' which is too recondite and a 'nature' which is too neutral and unfeeling; the vital, the organic, and the human, that is, against the merely mechanical; human freedom, fortune, and fate against the operations of an impersonal causality; will against force; value against fact; the human against the brutal.[32]

Like pragmatism, humanism defies a systematic and monolithic statement of definition. The term 'humanism' as a number of more or less distinct meanings, all referring to a world view in some way centered on man rather than on the suprahuman or the abstract. The definition of "humanism" as provided by Webster's Third International Dictionary reads as follows:

> A doctrine, set of attitudes, or way of life centered upon human interests or values: as a: a philosophy that rejects supernaturalism, regards man as a natural object, and asserts the essential dignity and worth of man and his capacity to achieve self-realization through the use of reason and the scientific method... b (often cap): a religion subscribing to these beliefs.

The ambiguity of the term "humanism" is created when an entire metaphysic is brought into play in the use of the term which results in different implications according to whether "we hold or do not hold that there is in the nature of man something which breathes an air outside of time and a personality whose profoundest needs surpass the order of the universe."[33]

There has been a consistent criticism against the

all-pervading technology that impacts on education. The interplay of men and machines in education and the value system that needs to be imposed have remained a favorite theme of educational theorists and technologists. For Finn, the automatic classroom was a combination of both men and machines, "but one in which the human element still plays the central part with the machines being the slave of man, not the other way around.[34]

It was Finn's belief that educational technologists insist that the products and efforts of industry concentrate on the human being. He went on to add that in the next few years, "we need more to follow the lead of Carl Rogers and Abraham Maslow than we do B.F. Skinner and other behaviorists. With media and a different instructional design, we can move into the affective domain and be concerned with human beings."[35]

Thus, on the one hand, there is a firm belief that technology is here to stay and progress; on the other hand, there is alarm and suspicion about the 'dehumanizing effects' of technology. The quest for values increasingly questions the relevance of technology and the 'uncertain' future to which educational technology would lead humankind. Consequently, it is opportune to examine the grounds on which humanists base their arguments against educational technology by choosing humanism as one philosophical genre to examine the instructional development processes in educational technology.

For these reasons, this study undertook a study of pragmatism, as proposed by Charles Sanders Peirce and William James, and Humanism, as put forward by the humanist psychologist Abraham Maslow and the Catholic metaphysician Jacques Maritain.

A JOURNEY THROUGH THE PAST

The AECT Committee for Definition and Terminology which drafted the statement of definition singled out three successive patterns of interest that for nearly 50 years shaped the development of the field of educational technology. There were: (1) the use of a broad range of resources, (2) the emphasis on individualized and personalized learning, and (3) the use of systems approaches.[36]

In a similar vein, it is expedient to review some of the salient contributions made by notable persons, events, and movements in the field of instructional/educational technology as it strove to discover its professional identity. This brief journey through history, which will be treated in the next chapter, is intended to underscore the importance of these contributions, to record the feverish excitement they caused, the hopes they raised and the disillusionments they produced as well as to emphasize the significance of the present study in its attempt to discover a new conceptual framework resulting from a philosophical investigation of instructional development practices.

FOOTNOTES

[1]Association for Educational Communications and Technology, "The Field of Educational Technology: A Statement of Definition," Audiovisual Instruction 17 (October 1972): 36.

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[7]ibid.

[8]Finn, Selected Writings, p. 173.

[9]Gerald Torkelson, "AVCR - One Quarter Century: Evolution of Theory and Research" AV Communication Review 25 (Winter 1977): 356.

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[13]AECT, Definition and Glossary, pp. 1-7.

[14]ibid.

[15]Lawrence Kohlberg and Rochelle Mayer, "Development as the Aim of Education," Harvard Educational Review 42 (November 1972): 449-96.

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[22]Glen E. Snelbecker, Learning Theory, Instructional Theory and Psychoeducational Design (New York: McGraw, 1974), p. 46.

[23]Corliss Lamont, The Philosophy of Humanism 5th rev. and enlarged ed. (London: Pemberton Publishing Co., 1965), p. 3-4.

[24]Donald P. Ely, "Toward a Philosophy of Instructional Technology," Journal of Educational Technology 1 (1970): 81.

[25]Susanne Langer, "On the Relations Between Philosophy and Education," Harvard Educational Review 26 (Spring 1956): 139.

[26]William James, Pragmatism: and Four Essays from the Meaning of Truth (New York: New American Library, 1909; A Meridian Book, 1974), p. 17.

[27]AECT, "The Field of Educational Technology: A Statement of Definition" Audiovisual Instruction 17 (October 1972): 37.

[28]Horace S. Thayer, Meaning and Action: A Study of American Pragmatism (Indianapolis: Bobbs-Merrill Co., 1973), p. 3.

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[30]Carlton H. Bowyer, Philosophical Perspectives for Education (Glenview, Ill.: Foresman and Co., 1970), pp. 17-18.

[31]Finn, Extending Education, p. 153.

[32]Albert W. Levi, Humanism and Politics: Studies in the Relationship of Power and Value in the Western Tradition (Bloomington: Indiana University Press, 1969), p. 15.

[33]Jacques Maritain, True Humanism, 5th ed., tr. by M.R. Adamson (London: Geoffrey Bles, 1950), p. xii.

[34]Finn, Extending Education, p. 153.

[35]Finn, Extending Education, p. 305-6.

[36]AECT, A Statement of Definition, p. 37.

CHAPTER II

REVIEW OF LITERATURE

This chapter will provide a brief historical survey of the Educational and Instructional Technology movement--the persons, events, and movements that influenced the growth of this profession especially from the 1920s--as well as a review of the literature on Pragmatism, Humanism, and the Instructional Development Institute (IDI) Model with its 24 decision-making steps, or processes.[1]

HISTORY OF EDUCATIONAL TECHNOLOGY

Early Beginnings

Although a comprehensive historical analysis of educational technology could be referred back to the educational writings and practices of Johann Heinrich Pestalozzi (1746-1827), Friedrich Wilhelm Froebel (1782-1852), and Johann Friedrich Herbart (1776-1841), as Paul Saettler mentions in his classic, A History of Instructional Technology[2], the early stirrings of such a movement could be traced back to the Elder Sophists in Athens and to the Socratic Method of Instruction in the fifth century

B.C. Later, Pierre Abelard (1079-1142) initiated the scholastic method of instruction where theological propositions would be presented with pros and cons; this was later improved by St. Thomas Aquinas (1225-1274). In his Great Didactic, John Amos Comenius (1592-1670), set forth a theoretical basis which included his ideas of Panasophia, a system of universal knowledge that dealt with every phase of instruction. The educational theories of Jean Jacques Rousseau (1712-1778), a non-teaching philosopher, would also influence later practitioners of instructional method since scholastic method was no longer practised in public universities; it was a new phase for instructional technology.

For all practical reasons, the early twentieth century, may be considered the time when instructional technology began to manifest itself as a distinctive field of educational enterprise. "It is clear," wrote Saettler, "that at the beginning of the twentieth century there occurred a series of related events, which, together, might be interpreted as the beginning of a science of instruction."[3] While acknowledging the philosophical underpinnings of educational technology as evidenced in the writings of early Greek thinkers as a historically valid link, Wallington did not find it operationally relevant for educational technology, an "essentially young field of study."[4] Ely stated that one ought to begin with the

twentieth century, since this is a twentieth century movement.[5]

James Finn wrote:

> Ours is a knowledge generating culture with its birth in the second Industrial Revolution, the age of automation, the age of atomic power. Instructional technology is related to this development and could be thought to have begun in the early 1920s.[6]

The stirrings of educational technology in the 1920s is connected with the first formal movement in visual instruction which was based on the concept of visual aids at the service of conventional teaching; the notions of classification of visual aids and their integration with the curriculum eventually followed, when still photography and motion pictures began to be increasingly used.

The advent of sound films broke the earlier resistance to this movement and took it one step further to audio-visual instruction.

PERSONALITIES

Three American educators whose writings, at the turn of the century, influenced the modern science of technology of instruction were William James, John Dewey, and Edward Thorndike. In Talks to Teachers on Psychology, published in 1901, James distinguished between the art and science of teaching and called for a scientific approach to instruction.

John Dewey was the pragmatist whose hypotheses were never submitted to scientific experimentation, despite his warnings to inquire, test, and to criticize. But his comprehensive theoretical system, which ranged from the nature of man and learning to ethical and logical theory, revolutionized the educational scene in the United States through the powerful Progressive Education Movement. Dewey's educational theories converted the conventional classroom into an experimental laboratory, an environment to be explored by the pupils. For him, stimulus and response were not to be sharply distinguished but to be seen always as organically related.[7]

If Dewey's educational theories were not subjected to scientific experimentation, Thorndike both theorized and investigated along scientific lines.

Thorndike anticipated programmed instruction when he wrote:

> If, by a miracle of mechanical ingenuity, a book could be so arranged that only to him who had done what was directed on page one would page two become visible, and so on, much that now required personal instruction could be managed by print.[8]

Proponents for programmed learning, who happily quoted Thorndike half-a-century later, did not pause to think that such techniques would be trivial when compared to his monumental writings on connectionism and the laws of learning. A student of William James at Harvard, Thorndike had formulated laws of learning that provided basic

principles leading to a technology of instruction. His law of effect stated:

> When a modifiable connection between a situation and a response is made and is accompanied or followed by a satisfactory state of affairs, that connection's strength is increased; when made and accompanied, or followed by an annoying state of affairs its strength is decreased.[9]

This signified the existence of a pleasure-pain principle according to which a connection between a situation (stimulus) and a behavior (response) is strengthened only if some success followed that response. This principle of reinforcement foreshadowed later works by Pressey, Skinner, and Glaser.

Behaviorism and Its Influence

WATSON

Watson, who shared many ideas with Thorndike, based his studies on the experimental analysis of human behavior, using techniques that were developed from similar studies of animal behavior. This first behaviorist abhorred consciousness as an unusable concept and advocated scientific means of predicting and controlling human behavior through teaching which consisted in the presentation of the correct stimuli to elicit the desired responses from the students.

SKINNER

B.F. Skinner who was influenced by the research of Pavlov and Watson sought a science of instruction based on operant conditioning in which sets of learned acts were reinforced so as to increase the probability of their recurrence. Key to successful instruction was the analysis of the effect of reinforcement and the design of techniques that are set up in specific and reinforcing sequences; the reinforcements themselves were made contingent on desired behaviors. These Skinnerian concepts provided the vital force for programmed instruction.

It seemed that a technology of instruciton based on operant conditioning would provide the necessary impetus and rationale to establish the profession on a firm footing. The human organism was seen more sensitive to precise contingencies than any other organism ever studied. "We have every reason to expect," wrote Skinner, "that the most effective control of human learning will require instructional aid."[10] If objections were raised against the 'dehumanizing' use of devices in classroom, or assessment of intellectual achievement in purely mechanistic terms was deplored, it was argued that the externalized manifestations, through measurable behaviors, vindicated such mental processes and states; human thinking must eventually be defined in terms of visible and verifiable behavior. There was a sense of implicit faith in the invincibility of behaviorism. In a paper presented at a

conference of Current Trends in Psychology and the Behavioral Sciences at the University of Pittsburgh, Skinner himself evinced this renewed enthusiasm.

> We are on the threshold of an exiciting and revolutionizing period, in which the scientific study of man will be put to work in man's best interests. Education must play its part. It must accept the fact that a sweeping revision of educational practices is possible and inevitable.[11]

TEACHING MACHINES AND PROGRAMMED INSTRUCTION

If this 1954 address marked Skinner as the progenitor of programmed learning, S.L. Pressey in 1926-27, had anticipated the movement with his testing machine. Pressey, who had little time for improving his testing machine, made his strongest contribution to educational technology through his strong belief which foresaw the dawn of industrial revolution in education and the more efficient and effective learning it would entail.[12]

The programmed learning movement gathered momentum as refinements were introduced in the clarity of objectives, alternative routes and individualized pace toward progress, and higher degrees of feedback; these were evidenced in the Dalton Plan and Winnetka Technique. Individualized educational projects such as the Individually Prescribed Instruction (IPI) and Program for Learning in Accordance with Needs (PLAN) are indebted to these earlier enterprises.

The 'teaching machine' revolution initiated by Skinner ran into opposition for purportedly venturing out to

replace teachers, misconstruing the notion that the learning process was necessarily mechanical, and even for being generally 'antiprofessional' and superficial. But by the early 1960s, the term 'program' came to be generally recognized as more acceptable than 'teaching machines' since the former meant "educational materials after they had been arranged in the best possible sequence for students."[13]

Programmed instruction, whatever be its limitations and contributions, would lead in later years to modified versions and uses of electronic computers and other print and nonprint instructional materials.

> An expansion of the concept of programmed instruciton to include whole schools led to the individualization of learning under such titles as 'continuous progress plan,' 'individually prescribed instruction,' 'the tutorial community,' and many others. These plans made use of various types of instructional modules having such labels as 'contracts', 'learning activity packages,' 'teacher-learning units,' 'performance criteria units, and 'UNIPACS.'[14]

If conventional teaching upheld the primacy of teacher, chalkboard and books, the "advent of programmed instruction in the late 1950s helped to place a new emphasis on the learning process and individual learner."[15] Learning was seen as the goal of the instructional process, and in the McLuhanesque landscape of 'mediated generation' where information level outside of school was found to be greater than that inside, the 'deschooling movement' initiated by Ivan Illich and the 'School Without Walls' movement

found greater acceptance.

MOVEMENTS

The Film and Television Decades

The ten-year-period immediately following World War II saw extensive studies in such areas as film effectiveness, motor skill training, and perceptual learning. But the wealth of instructional media research during this period was characterized by a preoccupation with 'evaluative' comparisons: from the baseline of prevalent teaching practices the greater effectiveness of these innovative techniques had to be vindicated. These studies showed decided advantages for films and other audiovisual materials over classroom instruction.

Following the legislative enactments that allocated television channels to education, the emphasis in instructional media research switched dramatically from film to television: thus was born 'the decade of educational television'--approximately from the mid-1950s to the mid-1960s. This change ushered in a repetition of 'evaluative' research.

Research and Evaluative Studies

The overriding concern of research studies in educational/Instructional technology was comparative effectiveness of different media. In 1959, William Allen completed a

paper for NDEA, Title VII, which examined an estimated 2,500 to 3,000 research studies in educational media that had been conducted since 1919. Allen concluded:

> Enough comparative effectness research has been conducted to show that all of the newer educational media can teach factual information ... It might be a waste of research effort to continue the gross comparative studies (single medium vs. conventional instruction) with any of these media, particularly with motion pictures and television, except under special conditions.[16]

Twelve years later, Allen undertook another important summary of media research that covered the 1950-1970 period and stated:

> With some notable exceptions, instructional media research prior to 1950 was characterized by a preoccupation with ... evaluative comparison. In other words, learning from some unspecified film or other medium was compared with learning from some unspecified presentation by an instructor or medium.[17]

Behaviorists and Cognitive Psychologists

It was becoming increasingly clear that behavior modification, as an approach to designing instruction and to evolving instructional principles, failed to provide a complete theory, though substantial efforts were made in planning and conducting empirical tests for their validation; instead of a new theory with interrelated principles, what emerged was mainly an orientation and a set of working procedures. At the 1967 Lake Okoboji Leadership Conference, James Finn, who called himself "a past supporter of behaviorism and shaping," said: "We must alter

our theoretical framework which is now moving in the direction of behavioral shaping at too rapid a rate." Although he did not believe that we should throw out the baby with the bath, "somehow we have got to get over on the human free side as well. We are sort of standing with one foot in both camps."[18] The other camp Finn mentioned was that of cognitive psychologists and educationists. "The black box of stimulus-response psychology has been invaded and the result is the development of theories about cognitive operations."[19]

In opposition to the behavioristic modifier's obsessive concern with overt observable behavior, cognitive psychologists emphasized the more complex cognitive processes such as thinking, problem solving, language learning, concept formation, and information processing. The learner, with a degree of autonomy and initiative was reinstated as the processor of information who actively selects and interprets certain stimuli from all those that impinge upon him in a learning situation. The major task of the instructor was to provide whatever guidance deemed necessary, as the 'student,' through inquiry search patterns, 'discovered' things for himself or herself.

Unlike the behavioral camp of Skinner and his eager devotees, the 'cognitive camp' was peopled by a loose group of influential psychologists and educationists like Jerome Bruner, David Ausubel, Ralph H. Ojemann, Jean Piaget, Paul

Torrance, A.D. Woodruff, and others. The 'discovery learning' principles, 'advance organizers,' principles of subsumption, and developmental theories from this camp have provided newer insights into instructional theories, but one might add that, alike the behavior modification approach, cognitive construct tradition retained an identifiable position, but no complete instructional theory formulation. Whereas empirical support for behavior modification is rather cogent due to operationally defined learning changes it employs, the cognitive theorists' conception of instruction and educational objectives are highly criticized for their lack of clarity and precision. They are, again, legitimately criticized more for what they are against, than what they are for.[20]

The logical and psychological premises heavily favored by their respective proponents, thus, seem to tilt the instructional development research in various ways. The 'logical' premises emphasize the learner, an orderly analysis of learner goals and desired outcomes toward a formulation of internally consistent objectives, task hierarchies, and instructional sequences; the 'psychological' approach, in contrast, emphasizes 'instructional' methods based on learning theory and the methods employed may be as divergent as the stimulus-response stance of behaviorists, or the 'advance organizers' of Ausubel's cognitive theory, or the 'modeling' principles based on

social learning theory. The question is whether, if at all, an optimal synthesis of both these logical and psychological approaches could be effected.

THREE PARADIGMATIC CHANGES

The radical change from being called "audiovisual instruction" to "educational technology" represented for this relatively young profession not only an enrichment phase, but almost a quantum leap. This was a revolutionary paradigmatic change which broadened its scope and deepened its impact. Parallel to developments in learning theories and sophistication in instructional materials were the introduction, increasing assimilation and identification with three orientations: communications, systems theory, and technology.

Communications

"A fruitful approach to better understanding and greater efficiency in the audiovisual field," wrote Charles Hoban in 1956, "seems to lie in the concept of communications."[21]

According to Lasswell, "no change in the academic world has been more characteristic of the age than the discovery of communication as a field of research, teaching and professional employment."[22] The communication orientation to what was then known as audiovisual instruction altered the theoretical framework of the field and the

entire process of communication and the dynamic models it engendered were being greatly studied. The concept of communications helped the audiovisual field of the 1950s to move into new directions. It was easier to transfer the concern for the role of media in education to an emphasis on the cmmunication of ideas.[23]

Systems Theory

The second important watershed in the history of educational technology was the introduction of the systems concept. Instructional product was no longer considered as the basic unit, but rather a component of a complete instructional system which was integrated according to instructional objectives and problems. The systems concept was essentially an idea of organization that included the gestalt or whole function of a unit of organization.

> . . . Instructional technology is more than the sum of its parts. It is a systematic way of designing, carrying out, and evaluating the total process of learning and teaching in terms of specific objectives based on human learning and communication, and employing a combination of human and nonhuman resources to bring about more effective instruction.[24]

Finn remarked: "For an audiovisual program ..., and this is the heart or our argument, ... is a clear-cut system.[25] He decried the atomistic fashion in which the audiovisual director managed his system, "which extends from producer to teacher and class back to producer again."

He concluded: "The audiovisual movement is relatively young. It is also geared into the technological world of the future--a world of interlocking, complicated system of men and machines."[26]

Technology

The technological world of the future--the third important orientation of educational technology--which Finn talked about had already made its mark, for interlinked with the concept of systems was the concept of technology which was more than "men and machines." John Kenneth Galbraith defined technology as "the systematic application of scientific and other organized knowledge to practical tasks."[27]

Technology helps to break down tasks into detailed subdivisions of functions or activities so that, through systematic observation, analysis and ordering, organized knowledge could be put to work. What Galbraith ascribed to economic planning could "apply across the board to our technological culture and to any large-scale application of instructional technology."[28]

A year later, Finn, who viewed the build-up of audiovisual equipment and materials in education as one of the principal conditions for a technological revolution, stated:

> Basically, I hope that... we can no longer afford the luxury of the traditional system; that the system needs a vast overhaul and, in order to

> solve some of the problems presented by the three revolutions, we must develop a technology of education that will carry a greater share of the load.[29]

The impact and influence of these three orientations--communications, systems theory, and technology--on educational technology have been considerable, and they continue to chart future directions for this profession. The AECT, after having acknowledged the contributions from various events, movements, and personalities, finally drew up the official definition of educational technology in 1976.

> Educational Technology is a complex, integrated process involving people, procedures, ideas, devices, and organization, for analyzing problems and devising, implementing, evaluating, and managing solutions to those problems, involved in all aspects of human learning.[30]

Changes in Names and Perspectives

It had been an arduous journey for Educational Technology, a journey replete with promises and opportunities, as well as fraught with disappointments and disillusionments. From the 'visual instruction' of the 1920s, it had grown into 'audiovisual instruction' and finally into 'educational technology,' each phase of growth and progress being punctuated with major theoretical orientations and lively debates regarding the label of the field. The Department of Audio-Visual Instruction (DAVI) of the National Educational Association (NEA) acquired the new title of the "Association for Educational Communications and Technology"

in 1970, which came in the wake of a major report to U.S. Congress. AECT's own professional journal, Audiovisual Communication Review (AVCR), underwent an appropriate transformation and was later renamed Educational Communications and Technology Journal (ECTJ).

The change in the name of this emerging profession was not a fortuitous occurrence, but a calculated move into newer directions and unexplored avenues. Across the Atlantic, the enthusiasm for the new name reflected not only a break with an unproductive past, but also an alliance with a hopeful future. At a 1966 conference of the Association for Programmed Learning, the role of this technique itself was reconsidered and programmed learning was thought to be possibly just one item in the coming revolution in educational technology. A year later, the journal of the Association for Programmed Learning, called Programmed Learning, was renamed Educational Technology. Eleven months later, in January 1968, a change in name was also effected in the parent association of Programmed Learning and Educational Technology. In 1970, another journal was also launched in Britain, the Journal of Educational Technology which would later be renamed the British Journal of Educational Technology.

RECAPITULATION OF HISTORICAL SURVEY

The brief historical survey of educational technology from its early beginnings, the exciting 1920s, the film and

television decades of the 1940s and 1950s, down to the present times of an 'exploding technological revolution' has attempted to array some of the noteworthy persons, events, and movements that shaped and guided the destiny of educational technology. The following names might serve to anchor the significant contributions to educational technology.

1. PERSONS: Educational thinkers like Thorndike, James and Dewey; stalwarts in instructional/educational technology like Finn, Dale, Hoban, Ely, Saettler, Allen, Heinich, Eboch, and Silber; psychologists like Skinner, Bruner, Gagné, Ausubel, and others.
2. EVENTS: Research studies of the postwar years; the film and TV impact studies, the years of teaching machines, programmed learning, programmed instruction, computer-assisted instruction, the establishment of DAVI and AECT, the Report of the Presidential Commission on Instructionl Technology, federal and private funding, technological progress in audiovisual hardware and software.
3. MOVEMENTS: Introduction of perception theories, learning theories, psychoeducational theories, especially behavioristic and cognitive orientations; paradigmatic changes occasioned by communications, general systems theory, and technology.

This historical survey also helped to highlight some of the trends and events that argue for a conceptual framework that could build into a philosophy of educational technology.

1. By tracing the origions of educational technology, especially from the 1920s up to the present time, one sees the concerted confluences of communication, behavioral sciences, general systems theory, and technology on educational technology in a clearer manner. These constitute definitive watersheds in the development and progress of educational technology and partially explain the flutter and ferment of activities which robbed it of any definitive philosophy or theoretical formulation.

2. The premium placed on practicality and an ambivalent approach to hardware-inspired software programs pre-empted any constructive and systematic development of unifying theories. In successive waves, film and television, programmed instruction and teaching machines, ATIs and TTIs, CAIs and CBEs have,[31] at various times, held the world of educational technology captive, and continue to exert their influence in varying degrees. Their technological percolations have, indeed, filtered into the collective consciousness of educational technologists, but any claim of their uniqueness and singularity in totally revolutionizing the field continues to draw only an indifferent chuckle from professionals, except for a hardened core of aficionados.

3. Research and experimental studies so far have mostly investigated themes and topics that are marginal, ungeneralizable and fragmented. Surveys of earlier research by professionals reveal that thousands of research studies now litter the educational technology scene as pieces of a jig-saw puzzle, waiting to be put together in a coherent pattern.

4. Educational technology has seen the fade-in and fade-out of various innovations, once trumpeted in as a 'significant technological breakthrough,' but now wistfully looked back on as a passing fad. Perhaps, new philosophical frameworks may serve as a factor in breaking the cyclic repetitions of the theme.

5. The worship at the temple of educational technology has been largely confined to North American and European votaries. The unabashedly parochial mentality exhibited in research concerns where the relevance of educational technology on American and British schools has been agonizingly searched gives the lie to an official statement of definition that proposes educational technology as the facilitation of human learning. Those who strive to facilitate human learning will now have to embrace a global outlook in drawing up a philosophy of educational technology.

Educational technologists have been described as people with a 'foot in two camps': "They seek to understand the theory and apply it."[32] But seeking to apply

scientific and other organized knowledge to the practical tasks of education, professionals in this field have been more concerned with practice than with theory; consequently, theoretical investigations have been feeble and sparse. Educational technology proponents have repeatedly affirmed the necessity of such theoretical forays into the domain of educational technology. If it must be, according to Hawkridge, the "New Jerusalem" of the education of tomorrow, the future will have to witness the rise of more theoretical-deductive work, more effective techniques grounded in strong theory, more thinkers than doers. Hawridge quotes a 1975 personal communication from Brian Lewis, which is pertinent here.

> If the required techniques are produced at all, they will be produced by thinkers rather than doers. I firmly believe that the future of educational technology is now in the hands of the thinkers. What is needed is a handful of experienced people, who have thought wisely and deeply, and who are literally obsessed by the problems posed. These people must also have the ability to analyze and synthesize, and, in effect, to invent whole new conceptual frameworks. If they do not have this latter ability, they will be soon reduced merely to improving what already exists.
>
> I think that this radical thinking is both a lonely and high risk activity.[33]

Various psychological theories of learning and teaching have inspired periods of intense activity in the domain of education, but none has been successful in providing adequate answers to all concerns of human learning. These theories, as sets of propositions which are syntactically

integrated and aimed at predicting and explaining observable phenomena, have had significant and valuable impact on educational technology. An extended theory-building with the theories in the arsenal of educational technology may be useful, but can also lead to implausible eclecticism where one theory would militate against another. If, however, these various theories could be organized into a meta-theory (or super-theory), which would seek to integrate harmoniously the implications of theories so far interlocked and "thus harmonize, integrate, rationalize, and explain all different conceptions" we would have a philosophy of educational technology.[34]

Right now, an aspiring student of the philosophy of education, especially from the field of educational technology, is struck by its varieties and the intensity of the allegiance that is demanded. These students would like to understand and acknowledge the philosophical underpinnings of educational theories, but due to its multiplicity and pervasiveness in educational technology, they become as confused as a directional magnet in a junk pile.

We have so far seen educational technology in its quest for a professional identity and the need for advancing a methodological inquiry to investigate the philosophical underpinnings that might underlie educational technology. We will now look at Pragmatism and Humanism to provide a perspective to undertake this study.

PRAGMATISM

In the following pages, we will look at the origins, of pragmatism, its two main protagonists in America, Charles Sanders Peirce and William James, and their contributions to this philosophical movement.

Pragmatism - Philosophical Antecedents

Pragmatism, although acknowledged as a characteristically American philosophy, has complex antecedents, and, in the words of William James, is a "New Name for Some Old Ways of Thinking," as he subtitled his book, Pragmatism. These ancient ways of thought could refer back to Plato and the Greek Sceptics.

Greek Origins

The Aristotelian distinction between the realm of true knowledge (epistémé) and of opinion (doxa) made it possible for cognitions of the latter kind, which are concerned with the sensed objects of our everyday world, to be considered sufficient for practical affairs of life;[35] but the search for theoretically adequate knowledge by serious philosophers could not be stilled with this arrangement. The Greek Sceptics, however, took the entire quest for philosophically genuine knowledge as a quixotic venture and urged that a knowledge which met the practical needs of life be considered adequate because any true knowledge of

the world was totally unattainable. "If a thesis is presumptively true, then it will serve the rational man with an adequate basis for practice."[36] The teachings of Academic Scepticism were revitalized by the "Mitigated Sceptics" of the seventeenth century. David Hume would take up this position and make it the central theme for latter thinkers.

Descartes and Kant

Modern philosophy, in the meanwhile, found its champion in René Descartes and in his uncompromising formulation that to think philosophically is to accept as true only that which recommends itself to reason. To make this claim watertight, W.K. Clifford, in the Ethics of Belief, provided a succinct formula: "It is wrong everywhere and for any one to believe anything upon insufficient evidence."[37]

But this Cartesian 'intellectualism' met with stiff opposition from many philosophies, especially from Germany where "voluntarism" was the prevalent philosophy. "I must abolish knowledge," Kant had written in his Critique of Pure Reason, "to make room for belief." Kant wanted to stress the limits of theoretical reason and offer to practical reason a primacy which, despite its scope and significance, was restricted to a sphere of human action and interaction; the domain of pure and theoretical reason was definitely excluded from here. "It is only from a

practical point of view that the theoretically insufficient holding of a thing to be true can be termed believing."[38] The obligations of morality, however, compelled us to think of ourselves as having a 'noumenal' self which lies outside the realm of causally conditioned 'phenomena' constituting experience. A crucial step to the development of pragmatism was, thus, taken through the aggrandizement of practical reason over theoretical reason, when Schopenhauer converted Kant's 'phenomena' into 'ideas.' It was found that the search for the philosophically genuine knowledge of Plato, which underlies ideas, cannot be carried out in the world around us (where we meet nothing but our own ideas), but rather in our consciousness of ourselves as possessing of will. Our actions are themselves ideas, so spoke Schopenhauer: as phenomena, they are ideas; but as meaningful, they are manifestations of a will. For him, thought was only an instrument of the will. This 'instrumentalist' analysis of human thinking would later influence the psychology of William James.

Kantian and Empiricist Heritages

Kant was read through the eyes of Schopenhauer, when Kant's 'phenomena' were converted into 'ideas.' A similar travesty was effected by some neo-Kantians like F.A. Lange, when through a reformation of 'phenomena' into 'sensations', Kant was read through the eyes of British

Empiricism. It is our human nature, Lange argued, that determines the kind of world we experience; Langean psychology replaced Kantian logic.

The Kantian analysis of the purposive character of belief and the roles of will and desire in forming belief, the Hegelian conception of change and development of subject matters, joined forces with British Empiricism, which stressed the role of experience in the genesis of knowledge, in shaping the emergence of American pragmatism. The Empiricists had analysed belief as being intimately tied with action, especially with the motive to act. When John Stuart Mill defined the external world in terms of possible sensations, Alexander Bain looked at it in terms of possible active responses to sensations. Bain, accordingly, defined belief as 'that upon which man is prepared to act,' and pragmatism, according to Peirce, was "scarce more than a corollary" to this understanding.[39] Thus, British Empiricism and German Voluntarism eventually constituted 'preparedness to act' as the foundation of belief, and paved the way for Pragmatism.

Pragmatism - Meaning of the Word

To be 'pragmatic' is broadly understood to mean "getting things done" such as in business or public affairs, or achieving results. In this popular sense, 'pragmatism' refers to the workability and practicality of ideas and proposals as criteria of their merit in the successful

pursuit of specific objectives. Academically, pragmatism is an opposition to invoking the authority of precedents or of abstract principles.

William James once remarked that pragmatism is derived from the Greek word, πραγμα, meaning action, "from which our word 'practice' and 'practical' come."[40] Peirce, whose 'pragmatism' connoted closer connection between purpose and cognition--as opposed to James who emphasized action, practice and the practical--could not bring himself to call his theories 'practicalism', because Kant's praktisch referred pointedly to the moral sphere. Instead, Peirce opted for Kant's usage of the term pragmatisch which with its reference to human purpose was more similar to his position. Pragmatisch refers to experimental and purposive thought based on and applying to experience.[41] James adds that the term was "first introduced into philosophy by Mr. Charles Peirce in 1878."[42] The article alluded to by James was published in the Popular Science Monthly.[43]

Early Beginnings: 1870-1898

The earlier presentation of the so-called Metaphysical Club at Cambridge, Massachusetts, in the 1870s and the first stirrings of the ideas of pragmatism have been chronicled in a number of studies.[44] At any rate, Charles Sanders Peirce is generally acknowledged as the originator

of the pragmatist movement in America. While much of Peirce's work remained unpublished and in relative obscurity except for lectures and authored essays in dictionaries, it fell to William James, well-known psychologist and philosopher at Harvard, to champion the cause of Pragmatism through journal articles and popular lectures. James freely admitted his indebtedness to Peirce whose lectures on pragmatism he dubbed as "flashes of a briliant light relieved against Cimmerian darkness!"[45] Nevertheless, his own definitive contributions and insights would mark William James as a protagonist for pragmatism. The purposive theory of mind which is one of the pivotal issues in the pragmatism of James is foreshadowed in The Principles of Psychology, one of his monumental works published in 1890, and his analysis of the purposeful direction of thought distinguishes The Will To Believe, published in 1896. But James through his "Philosophical Conceptions and Practical Results," a lecture delivered on August 26, 1896, before the Philosophical Union of the University of California at Berkeley, developed substantially his own formulation of the pragmatic method for dealing with philosophical problems.

Peirce, in his article "How to Make Our Ideas Clear" published in 1878, had stated that the sole motive of thought was to produce belief, and belief, in turn, was a rule for action.[46] The whole function of thought is to

produce habits of action.[47] Then, in a celebrated maxim, which he later called 'definition of a definition', Charles Sanders Peirce stated:

> Consider what effects, that might conceivably have practical bearings, we conceive the object of our conception to have. Then, our conception of these effects is the whole of our conception of the object.[48]

Peirce argued that we could make our ideas clear by determining what conduct the ideas prepare us for. James endorsed this principle, but with a further clarification. He suggested that a concept dictates specific conduct because it first foretells some particular turn in our experience which shall call for that conduct from us. He stated:

> The effective meaning of any philosophical proposition can always be brought down to some particular experience, whether active or passive; the point lying rather in the fact that the experience must be particular, than in the fact that it must be active.[49]

Both the original declaration of Peirce in 1878, and the Berkeley lecture of James in 1898, generated little interest. But, when the Lowell lectures at Boston in 1906-7, and the reworked articles and earlier lectures[50] were integrated in the publication of Pragmatism in 1907, it sparked a lively controversy. Negative criticisms came from Bertrand Russell, G.E. Moore, F.H. Bradley, and others. Although they did not share a single theory of pragmatism, Peirce, Dewey, and F.C.S. Schiller came to the defence of James in this pragmatist vs. antipragmatist controversy to

present a single "orthodox" position. In the first year of its publication, Pragmatism went into five printings; and pragmatism as a definitive philosophical movement in the United States was clearly established.

Charles Sanders Peirce (1839-1914)

Charles S. Peirce was born in Cambridge, Mass., in September 1839. His formal education culminated with a degree in chemistry from Harvard University in 1863. From 1861 to 1891, he was on the staff of the U.S. Coast and Geodetic Survey, though from 1869, he was also associated with the Harvard Observatory for some years. While he was, for a time, in charge of the Office of Weights and Measures, he recommended the expansion of this office which eventually led to the establishment of the National Bureau of Standards in 1901.

Peirce also lectured at Harvard on history of modern science and logic during various academic years, from 1879 to 1884. He served also as lecturer on logic at John Hopkins University. His divorce and subsequent re-marriage in 1883, and especially his nonconformist views with the establishment prevented his academic appointment from being renewed, and his frequent clashes with the administration at the Geodetic Survey finally led to his resignation from this office in 1891. From then, he never held any academic post nor had he any regular income; so he tried to make

ends meet by writing reviews and articles for dictionaries. Peirce's last years were spent in abject poverty and sickness except for generous help from such friends as William James--in whose honor Peirce added Santiago (St. James) as his middle name. He died of cancer on April 19, 1914.

A scientist by career, Peirce was passionately wedded to logic. Although he wrote technical papers in such diverse subjects as chemistry, philology, history of philosophy, and religion, he gave a series of Lowell lectures and Harvard University lectures in logic. Peirce was a thinker of the first magnitude. As a brilliant logician, Peirce was given to careful analysis and his pragmatism is primarily a matter of logic, although it is set forth as a theory of meaning and a method of making our concepts clear. At the same time, his speculative mind sought for a general interpretation of reality--a difficult task which resulted in some unsolved ambiguities. With the publication of the first six volumes of his Collected Papers between 1931 and 1935, a steadily mounting interest is evinced in his philosophical ideas; the freshness, originality, and penetration of his writings continue to impress his readers.

Peirce, James and Dewey, the impressible trio of pragmatist stalwarts, are usually acclaimed to have furthered the cause of pragmatism, but among these, none deserves the title of popularizer of pragmatism more aptly than

William James. A physician turned psychologist and, gradually, a philosopher, James is the live-wire who turned the spark of interest in pragmatism like a wildfire on the American landscape.

William James (1842-1910)

William James was born in New York City on January 11, 1842. Educated in private schools in Europe and the U.S.A., James entered Harvard University to study chemistry and anatomy, and later enrolled in Harvard Medical School. Before he obtained his M.D. from Harvard in 1869, he had taken time for a zoological expedition to Brazil and to study physiological psychology in Germany; he thus became remarkably informed in science as well as German, French and English literature.

Beginning as an instructor in anatomy and physiology at Harvard in 1873, James quickly turned his attention to teaching psychology, and held professorships in philosophy, psychology, and again in philosophy from 1885 till his retirement in 1907. James, who contracted to write a general treatise on psychology in 1878, took 12 years to accomplish his task because he could not find a satisfactory theory of cognition; but when The Principes of Psychology was published in two volumes in 1890, he became a celebrity and the book was translated into many European languages.

A son of a clergyman, James did not belong to any official church, but rather cultivated a personal religion; his philosophical writings can be regarded as an intellectual search for religious faith. Both in The Varieties of Religious Experience (1902) and The Will to Believe (1897), James looks at the life of religion which for him consisted of the belief that there is an unseen order and that our supreme good lies in harmoniously adjusting ourselves to it.

In 1907, James published Pragmatism where he proceeded to elaborate a theory of truth--although he called it a "method" for determining and testing hypotheses. Absolute truth can exist only in a created and fixed universe, James argued, but the "pluralistic" universe that we experience is different from it and human efforts should subsequently be focused in shaping a future world.

Recognized in his last years as the foremost American philosopher of his time who wrote in a lively literary style; James died on August 26, 1910.

Inconsistencies in Writings

Despite the significant contributions of both Peirce and James towards the advancement of pragmatism, it would be erroneous to assume that pragmatism is proffered as a conceptually clarified monolithic system with uniform metaphysical interpretations about reality, truth and meaning.

There are inconsistencies as well as apparent and real contradictions in their writings, as they strove, over the years, to reword and reformulate their metaphysical writings. The impact of various philosophical theories like the British Empiricism, Darwinian Evolutionism, Hegelian Monism, Kantian Idealism, Scotistic Realism, and the Positivism of Comte on the emergence of pragmatism is considerable; both Peirce and James absorbed and reacted to these philosophies in varying degrees. When Professor Lovejoy undertook in 1908, a study of pragmatism in an effort to clarify what it purported to be and distinguished thirteen points of the doctrine,[51] F.C.S. Schiller replied that there were theoretically as many pragmatisms as there were pragmatists.[52] The notion that according to pragmatism the criteria of usefulness determine the meaning and the truth of thought gained ground in uncritical circles which development was, in no small part, due to the colloquial and unclear language employed by the pragmatists themselves.

Some observations may be helpful in understanding the philosophical positions of Charles Peirce and William James.

1. The pragmatists were partly to blame for the confusion engendered by their positions. James had a popular style and arresting language and often used expressions which were either misleading or designed to confirm the prejudices of his critics. While his younger brother, novelist

Henry James, wrote with careful qualifications and minute attention to details that one might expect of a philosopher, William James carried "the reader away with his humor and zest and the vividness of his imagery."[53] His characterization of truth as "the expedient in the way of knowing" cannot help being misunderstood as 'calculating.' "You must bring out of each word," he wrote, "its practical cash value, set it at work within the stream of your experience."[54]

Peirce's style alternates clarity with obscurity. He could be admirably lucid in discussing complex issues, but could also be disconcertingly capricious in dark sayings. Josiah Royce summed up the matter very wel when he observed: "It is not always easy to understand Peirce ... Too often the reader meets with a thought of surpassing brilliancy, and follows it eagerly, only to have it disappear like the cuttlefish in the inky blackness of its own secretions."[55]

2. The writings of Peirce, though consistent and strictly logical, were not subsumed into a system during his life time. The six volumes of his Collected Papers were posthumously published and, except for occasional contributions to journals and dictionaries, the original manuscripts of Peirce went largely unnoticed and some of them evidence temporal development. Similarly, part of the looseness and vagueness of James's thought can be attributed to a fact characteristic of his published works: all of

his works except for The Principles of Psychology and its abridgement, Psychology, were either published lectures ... or collected articles.[56] One is reminded of the vivid characterization by James of consciousness like the flight of a bird which is made of an alternation of flights and perchings.[57] The intellectual flights of James are made up of articles, speeches, and letters--and the books provide the perchings. James often expressed the hope of doing a systematic work, but the man who wanted to be a 'philosopher's philosopher' was a victim to a lecture-circuit which relentlessly demanded his time and energy; he lapsed into a "squashy popular lecture style"[58] and in 1904 alone, he records, he declined one hundred invitations to speak.[59]

3. Perhaps it would be more accurate to state that the looseness in James's thought is attributable to his aversion for strict, rigorous thinking. James himself acknowledges this in a letter: "I permitted myself to remain so deliberately on account of the strong aversion with which I am filled for the humbugging pretence of exactitude in the definition of terms and description of states that has prevailed in psychological literature."[60] All the same, James remained faithful to the concern of presenting a unified picture "as it presents itself to my own eyes, dealing in broad strokes, and avoiding minute controversy."[61]

The specific doctrines of pragmatism, namely their theory of meaning, the theory of truth, and the scientific inquiry method is dealt with in greater detail in Chapter III where the pragmatist perspective for the analysis is discussed.

HUMANISM

The Sophist Beginnings

In its broadest sense, humanism is a concept as ancient as classical Greece and as modern as the twentieth century. It could be termed basically as a philosophical outlook centered on the autonomy of man as a dignified, rational being, possessing within himself the source of truth and right. The Greek Sophist Protagoras in the fifth century B.C. declared: "Man is the measure of all things." Human consciousness was enthroned as the alpha and omega of all thinking, and the individual as the center of values. This humanistic scholarship has been a rich legacy for the West that viewed human personality as a virtue, while the sages of the Orient dismissed it as an illusion and an evil. From the golden age of Greece that culminated in the age of Pericles down through the centuries came the Homeric poems, Aesychlian dramas, Pindar's odes that celebrated patriotism, sacrifice, chivalry, and virtue, paving at the same time the way for the dehumanization of mythology in which they were couched.

In Athens, the humanistic Sophists transmuted mythos to logos and tradition to intellect. These founding fathers of pedagogy changed the age of theogony into the age of rationalism. As early as the second century A.D., Aulus Gellius, a Latin rhetorician, "stressed the need for literary studies as alone able to endow man with the fullness of humanity in accordanc with the ideal of the Greek paideia (education) and the Roman humanitas.[62] Curious about various aspects of humanity, the Sophists undertook a systematic study of human reality that sought to liberate it from any mythical or religious preoccupations; pedagogy became the precondition for reform in human understanding. The gods came down to earth: according to the ancients, Socrates deserved the credit for having brought philosophy from the heavenly abode of gods to the earthly abode of man.

Pedagogy: A Humanistic Contribution

If the art of pedagogy had as its goal the formation of the political man, oratory was the technique employed, an intellectual mastery of manipulating one's fellow citizens. The Sophists systematically organized a course of seven arts (later called the 'liberal arts') which provided a harmonious and thorough-going education in the scientific quadrivium or the four disciplines (arithmetic, harmony, geometry, and astronomy) and the literaray trivium or

three disciplines (grammar, rhetoric, and dialectics). These would provide for the later universities the pattern of paideia and would endure for over 2,000 years.

Plato was suspicious of some of the seven arts because thought was endangered with a possible enslavement to the perceptible. In contrast, Aristotle was a systematic thinker and an analytical genius. So benumbing was his intellectual prowess and overpowering the weight of his authority that, centuries later, generations of scholars would rest content with repeating his teachings and close interminable debates with a magic call upon his authority, "ut dixit magister"--thus spoke the master.

An Aristotelian disciple, Alexander the Great, carried his teachings and wisdom into the countries he conquered. The Mouseion or the House of Muses, from which the word 'museum' is derived, established at Alexandria in Egypt was the prototype of Oxford and Cambridge, and the "Treasure Island" of scientific research as Francis Bacon would call it in his New Atlantis.[63] Alexandria remained the cultural center for at least seven centuries for Moslems, Jews and Christians.

Latin Culture and Greek Antiquity

Just as the Jews were molded by the sacred writings of the Torah and Talmud, the Moslems by their sacred Koran, and the Christians by the Bible, the primary concern of these peoples was their spiritual identities and the secret

of their humanist calling would not register any upsurge till religious intolerance was lifted. The medieval period with Christianity as the state religion saw the acknowledged preeminence of christian values over pagan teachings; the Roman west eclipsed the Byzantine east; Latin culture preceded the Greek culture and Greek thought was relegated to a literary limbo. The reactions of the authoritarian Church-directed culture varied from strict suppression of classical learning to a secretive appropriation of certain elements like inoffensive extracts from classical literature, subsumption of grammar and rhetoric, and enthronement of Aristotelian logic by scholasticism for the expounding of christian doctrine. Under the guidance of the Church Fathers, a cultural updating was effected and humanistic scholarship with its pagan overtones was made a handmaid of christian revelation. The Church Fathers also played a key role in the peaceful coexistence of a double heritage--the pagan and the christian--which molded the consciousness of the west.

The Renaissance Period

A transformation of the European consciousness seemed imperative as new and direct relationships were being established with the heritage of Hellenic antiquity. The positive religious ideals that were inherent in the protest against the abuses in the Catholic Church were only a part

of the heritage of the reforming tradition that swept through Europe. The winds of change that gathered momentum in the sixteenth century were fanned, to a considerable degree, by the growing intellectual changes that gripped the continent earlier. Two significant trends could be cited: the discovery and acquisition of ancient Latin and Greek manuscripts in private libraries and the development of printing.

The enthusiasm for Greek in the world of Italian scholarship had begun long before the fall of Constantinople in 1453. The Medicean manuscripts of Tacitus and Livy in classical Latin would eventually result in the 1515 printing of Editio Princeps and establish their influence in the age of humanism. Great libraries that came into being in the fifteenth century under the scholarly leadership of personages like Pope Nicholas V, Cardinal Besarion of Venice, Cosimo and Lorenzo de' Medici of Florence saw an increase in the number of Greek texts; these libraries of the great age of humanist scholarship were almost princely or private libraries, in contrast to the libraries of the European universities that grew around abbeys and monasteries.

The development of printing with movable types brought this intellectual ferment still closer to the masses. "It opened new horizons in education and communication of ideas. Its effects were felt sooner or later in every department of human activity."[64]

The growth of a secular reading public slowly chipped away at the prerogatives of the clergy. The social and economic evolution that came in its wake altered the face of scholarship as the writings of Plato, Moses Maimonides, and other Hebrew and Arabic scholars were increasingly read by an enlightened populace. "The development of a sense of perspective on the past, the ability to place oneself in time with respect to an age as a whole, the awareness of historic distance, all this was a contribution essentially of a humanist thought."[65]

The Age of Reformation

The Age of Reformation was ushered in two distinctive waves: (1) the pietistic and mystic approach to ecclesiastical reform with its reliance on immediate divine guidance and spearheaded by individuals like Thomas á Kempis and Jerome Savanarola, and (2) the new scholarship and the christian humanistic philosophy which was built upon the conviction of the paramount status of rationalism and intellectual aristocracy, championed by scholars like Erasmus and Machiavelli. Nature was stressed over grace, action was preferred to contemplation, and ethics dethroned theology. Neo-platonism was to the humanists what Aristotelianism had been to St. Thomas Aquinas and his followers.

A veneration for the prestigious genius of the Greek and Latin antiquity did not imply a myopic view to its shortcomings in understanding the real wrold. According to

Francis Bacon, the discovery of the geographical New World elicited a necessary elaboration of a new mental world. Horizons were being broadened and the concern to treasure the classic ancient wisdom was paralleled by an effort to compose new masterpieces, no more in Greek and Latin, but in modern languages. Bacon's Novum Organum (1620) was to replace Aristotle's Organon; Galileo's book on nature was composed in mathematical signs.

Humanistic scholarship passed from the sacralized past to scientific investigations.

The rebellion of the Renaissance humanists is best exemplified by Petrarch of the fourteenth century and the New Learning of the Italian humanists who still treasured the revival of the classical spirit. But it still produced a voluminous literature of its own, first in Latin, later in Italian. Toffanin wrote in his book, Che Cosa fu l'Umanismo, about Humanism:

> That particular state of mind and culture to which in Italy, from the fourteenth to the sixteenth century, we give the name of Humanism, was a rebellion, and acted for at least two centuries as a barrier against certain heterodox and romantic forms of unrest, which were germinally present in the city-state, and which later triumphed in the Reformation.[66]

A movement that began with Petrarch and, later, with Boccaccio continued to live in the writings of Enrico Dante, Marsilio Ficino, Nicolo Machiavelli, Aeneas Piccolomini, and others. Philosophically, Italian humanists agreed in their belief in the reasoning power of human

beings, their freedom of choice and an innate sense of moral goodness, but there were also limitations and uncertainties in human life.

Human frailty forms the pessimistic background for Machiavelli's Prince. "For him, men were evil and corrupt and had to be coerced to do good. Because of the evilness of man the institutions he creates are always bound to decay, no matter how firmly established they seem to be."[67] In England, a young contemporary was, however, painting an optimistic picture with the traditional material of political thoughts. Contrasting with the realistic analysis of Machiavelli, who constructed a contemporary scene based on the world of European monarchies, Sir Thomas More built up a frankly unreal Utopia, existing neither in time nor in space. Both drew on the inspiration of humanist interests. Thus, "the literary humanism of the Renaissance, proceeding from the Italian Petrarch to the Dutch Erasmus and his disciple Thomas More, broke through the prison walls of medievalism and opened a wider horizon on history than the enclosed outlook of the Catholic Church."[68]

Renaissance Humanism flourished in the writings of Erasmus, Montaigne, Rabelais, Diderot, the French Encyclopaedists, and others. Its insistence, according to Lamont, on getting away from religious control of knowledge, stress on the ideal of human personality, and the actualization of

human potentialities still endure in present-day humanism.[69]

This long tradition of humanism points one salient feature: humanism is historical rather than metaphysical. It extolled man as his own rule and end; human life was in human hands. Abstractly, it is a concept of man focused upon a program of humanity.

Some Basic Assumptions

It may be worthwhile to gather in capsule form some of the distinctive accomplishments and characteristics of humanism.

1. Humanism signalled a revolt against the Church and the limitations imposed on knowledge by ecclesiastical authorities.
2. Humanist intellectual awakening consisted largely in a rediscovery of and a return to Greek and Latin classics.
3. Humanism stated that an individual, through a harmonious combination of personal satisfactions and self-development through work and service to the community, can attain 'good life.'
4. There is ultimate faith in man and in his power to resolve his problems, primarily through reliance on reason and scientific methods.
5. Scientific methods postulate an opposition to universal determinism and an insistent questioning

of basic assumptions and convictions, including its own.

6. Humanism acknowledged religion as an organizing principle of existence that provides human beings with the opportunity of losing themselves in a great ideal, far above their petty selves, but without any binding adherence to dogmas.
7. Humanism accepted that lives are shaped in decisive freedom and that it is this freedom of choice and self-determination which provides them human meaning.

Today, humanism provides a critique of alienating and depersonalizing tendencies, whether the source is technology, religion, ideology, or bureaucracy. Once a weapon in the hands of free-thinkers who demanded freedom from authoritarian ecclesiastical control, today humanism has been redefined and expanded to express a this-wordly concern for human happiness.

Can Humanism be Defined?

Any attempt at defining humanism runs the risk of excluding one form of humanism or truncating the other. "There are Humanists who are naturalists (John Dewey)," wrote Sidney Hook,[70] "Humanists who are supernaturalists (like William James) and Humanists who are non-naturalists (like Felix Adler and G.E. Moore)." The result has been an

outgrowth in humanistic outlook that ramified into an endless array of adjectives: Christian Humanism, Greek Humanism, Radical Humanism, Liberal Humanism, Scientific Humanism, Socialist Humanism, etc. Blackham, author and former director of British Humanist Association, deprecates any definition of humanism that mutilates it with an epithet like 'scientific,' 'religious,' or 'ethical.' "For this gives exclusive or special right to a selected aspect of human life and maims the body of all-round Humanist concern with human being."[71]

The impossibility of defining Humanism in the sense in which scientific concepts are defined was underscored by J.P. Van Praag, President of the International Humanist and Ethical Union. While scientific concepts that are meant for a theoretical framework of coherent notions can be unambiguously defined by eliminating all confusing elements, humanism due to the existential value it professes defied such an attempt, he said. "It is bound up with emotions and evaluations. Humanism is a moral conviction rather than a theortical speculation. Therefore it is more suited for a clarifying description rather than for an unambigous definition."[72]

Varieties of Humanistic Outlooks

It is beyond the scope of this study to undertake an analysis of various humanist outlooks, but an attempt is

made here to encapsulate the main tenets of selected forms of humanism. They will be of help in understanding the humanist teachings of Maslow and Maritain whose humanist perspectives are employed in studying the decision processes of the IDI Model.

ETHICAL HUMANISM

Ethical Humanism grew principally out of the American Ethical Union and emphasizes "right relations" between peoples as the most important thing. Sidney Hook defines an ethical humnist as one "who relies on the arts of intelligence to defend, enlarge and enhance the areas of human freedom in the world."[73] There may be differences in their views, but respect is always maintained for the opponent. To these conflicts, they bring the only value that is also the judge of its own efficacy and limitation--human intelligence. It is a philosophy founded upon the twin principles of human responsibility and personal worth. Ethical humanist views are held among educators, religious leaders, and secularists. Edward Ericson who was the philosophical successor of William James, F.C.S. Schiller, John Dewey, and Morris Cohen are also counted among ethical humanists.

NATURALISTIC HUMANISM

Naturalistic Humanism recognizes that vast stretches of reality yet remain beyond the present ambit of human

knowledge and is confident that future discoveries of truth will reveal an extension of the natural realm of being. One of its protagonists, Corliss Lamont, says: The term naturalistic shows that humanism, in its most accurate philosophical sense, implies a world-view in which Nature is everything, in which there is no supernatural and in which man is an integral part of Nature and not separated from it by any sharp cleavage or discontinuity.[74]

SCIENTIFIC HUMANISM

Scientific Humanism arose through the thinking of John Dewey, Julian Huxley and others, but can be traced back to Francis Bacon and his maxim given in Novum Organum which declared: "Pursue science in order that the human estate may be enhanced." To commit oneself to humanist values is to put the welfare of human beings first, to make the people supremely important, to adopt human welfare and human goods as the ultimate criteria of right and wrong.

The Scientific Humanism of Julian Huxley is not so much a question of humanism founded on science as of a balance beween science and humanism. "Humanism, Huxley maintains, should combine a devotion to human values, derived from traditional and developing religious and aesthetic experience, with respect to science."[76] Huxley's own brand of humanism is called Evolutionary

Humanism because he holds that man's highest destiny is to paricipate in the creative process of evolution.

Lamont who calls himself a Naturalist Humanist lists Huxley in his ranks; this may look erroneous, but can be logical. "I cannot see that the adjectives used make much difference--Naturalistic Humanism and Scientific Humanism are much the same."[77]

NEW HUMANISM

New Humanism was born out of a profound disaffection with the twentieth century conception of man who had lost his bearings in the triumph of relativism in philosophy and social thought, of materialism in daily living, and of romanticism and naturalism in literature. Back to the first principles, New Humanists exhorted, back to a precise and adequate conception of the nature of man! They forged an intellectual conservatism which defends cultural traditionalism and classical principles of art against Darwinism, which placed a premium of adjustment to external conditions as a measure of progress, and pragmatism which, in registering the impact of science on modern thought, overstated man's ties to his environment.[78]

Irving Babbitt and Paul Elmer More are the most important figures in the movement of New Humanism which also includes names like Stuart Shuman and George Ray Elliott.

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MARXIST HUMANISM

Marx maintained in his Economic and Philosophic Manuscripts that he was a humanist and attacked the usurious character of capitalism for dehumanizing and alienating man and wanted to find a "way out of the despair and decomposition of human personality."[79]

P.N. Fedoseyev, head of the Institute of Philosophy in the U.S.S.R., maintained that "Communists are undoubtedly the most consistent humanists. Communism is a real Humanism. The philosophy of Communism does not tolerate any form of anti-Humanism."[80] Marx proposed that in the place of the profit motive of capitalism or the substitution of state for private ownership in socialism, the principle of communism be the freedom of man, the reconstitution of his wholeness, and the unity of mental and manual labor which society so far had exploited, thus alienating man not only from the products of his labor but from the very activity of labor itself. This form of humanism is now carried into Marxist Humanism.

Broadly viewed, one could look at Humanism as a cultural movement with meanings and developments which the adjectival epithets attached to it fail to entirely express. It is broader than the organizations that allegedly represent it, whether they are religious, professional, political, or cultural. It is present in many active thrusts without any conscious formulation. Disparate ideologies find common ground to nest on humanism, Marxist

Humanism and Christian Humanism discovering commonalities in their concern of man and directing him to a paradise--the former to an earthly one, and the latter to a heavenly one.

One might say that Humanism expresses the belief that man has potentially the intelligence, good will, and cooperative skills to survive on planet Earth.

Humanist Psychology of Maslow

B.F. Skinner once wrote that there were two ways of knowing about a person: one way is associated with what a person *does*, the way he turns his environment through which he acquires a repertoire of behavior; the second way is that of knowing what someone *is* or what he is *coming to be* or *becoming*. He places Abraham Maslow's humanistic psychology in this second way of knowing a person because, with its emphasis on what a person is or is becoming, humanistic psychology is "at home in existentialism, phenomenology, and structuralism."[81]

Along with C.G. Jung, Carl Rogers, Karen Horney, Erich Fromm and other psychotherapists, Abraham Harold Maslow represents a divergent trend of thought and a dramatic change in thinking about human nature. It represents a reaction to what Maslow considered as "the gross inadequacies of behavioristic and Freudian psychologies in their treatment of the higher nature of man."[82]

An early disciple of J.B. Watson and his "programmatic writings which promised a clear road," Maslow had exuberantly followed behaviorism with the hope that "it could be a real science of psychology, something solid and reliable to depend on to advance steadily and irreversibly from one certainty to the next."[83] Maslow was soon disillusioned with the behavioristic approach which he described as

> associationist, experimental, mechanomorphic psychology, the psychology which can be called 'classical' because it is in direct line with the classical concept of science.[84]

Freudian psychoanalysis, which dominated the whole field of clinical psychology, was to Maslow a theory of art and a religion of society as well as of every major endeavor. Maslow did not contend with its ambitious programs, but rather with its reflections of an inadequate view of human beings and their world. The triumphs of natural sciences had galvanized psychologists to emulate successful mathematicians and physicists of the nineteenth century that belied the conviction that "their success can be ours." Maslow argued that psychology, as a science in its infancy, had to work out its own methodology and philosophy, instead of indiscriminately copying and applying experimental methods of natural sciences which truncated its world-view and resulted in an atomistic world where complex things are built out of simple elements. These

'reductionist' tendencies have succeded well enough elsewhere in science, for a time at least, but in psychology, it has not. "Attacking such reductive efforts is then not an attack on science in general but rather on one of the possible attitudes toward science."[85] Maslow saw that many psychologists were content to work with but a portion of the human being, forgetting that "ultimately their task is to give us a unified, empirically based conception of the whole human being, of human nature in general."[86]

The trouble with Freudian psychologists is that they are guided by a half-known map which is disavowed and denied, and subsequently, immune to intrusion and correction by newly acquired knowledge. This unconscious map or theory guides his reactions far more than does his experimental knowledge, argued Maslow. The issue was not over whether or not to have a philosophy of psychology, but whether to have a conscious or an unconscious one.

Freud dealt with the unconscious and Maslow elected the conscious.

As a result, Maslow believes that in the early stages of exploration, a discipline like psychology will have to be content with inexactness and uncertainty. In an undated note, he wrote:

> To demand rigor, exactness, detail from a first exploration of a wilderness is just plain silly, and I've refused to be apologetic about discovering a gold mine.[87]

It is necessary for a move from "scientific accuracy" to "scientific adequacy." It is this preoccupation with accuracy at the expense of adequacy that forces classical academic psychology to deny any systematic place for higher-order elements of personality, such as altruism or search for beauty. Maslow said: "You simply do not ask questions about ultimate human values if you are working in an animal lab."[88]

Maslow would gladly accord Freudian psychoanalysis, with its improvements, recent revisions and variants, the highest accolade saying that there is "not even a near second available" to this theory; he calls it "our best system of psychopathology," and its characterology useful for the therapist trying to cure psychological illness. However, it is quite unsatisfactory as a general psychology. "The picture of man it presents is lopsided, distorted puffing up of his weaknesses and shortcomings that purports then to describe him fully. This it clearly fails to do."[89] Practically all the activities that man prides himself on, and that give meaning, richness and values to his life, are either omitted or pathologized by Freud. Generosity, for instance, is interpreted as a reaction formation against stinginess, which is deep down and unconscious, and therefore somehow more real; kindliness is a defense mechanism against violence, rage, and the tendency to murder. Maslow wrote:

> Partly because of this preconception, it has

> so far revealed to us much about man's shortcomings, his illnesses, his sins and his weaknesses, but rather little about his virtures, his potentialities, or his highest aspirations.[90]

This negative attitude of the Freudians seeps into their view of a healthy human being as simply "not very sick" and regard "normality as a special case of the abnormal."[91] In contrast, Maslow espouses a "health psychology" that he believes will lead us to conclude that psychological illness is primarily a struggle toward health.

Freud and behavioristic psychologists had too narrowly defined human nature and its development to afford it the opportunity of 'becoming' much more than what the society had credited him or her with. Through an intense study of "self-actualizing" or "more fully evolved" world citizens, Maslow proceeded to offer what he considers to be adequate conceptions of 'human wholeness' and the full development of human potentials.' They constitute satisfying criteria for optimum human growth.

In his classical work, Toward a Psychology of Being (1962), Maslow coined the phrase, "the third force" and sent it surging into the world of psychology which was until then dominated by two psychological forces, Freudianism and Behaviorism. Logical positivism and extreme behaviorism, with their emphases on observable responses and external pressures rather than thoughts, feelings and internal promptings, were concerned with explanations of

human behavior and not with its subject matter per se. Humanism, as espoused by the "Third Force" psychologists, leads to a psychology which is not only centered on the human being but sets positive value on human capabilities and aspirations. With an existentialist tinge, it also reflects on human actions and the meaning and value of human existence.

Abraham Maslow (1908-1970)

Abraham Harold Maslow, one of the most provocative thinkers of modern psychology, was born in 1908, in Brooklyn, New York. His father, an uneducated immigrant from Russia, hoped that his son would perhaps as a lawyer be successful in life. But Abraham, who grew up a Jew in a non-Jewish neighborhood, lived among books and, while still in high school, fell in love with Bertha whom he married four years later, when he was 20 and she 19. For young Maslow, "life didn't really start" until he got married which gave him a sense of worth and direction.[92] After two years in Cornell, Maslow went to the University of Wisconsin "where he had discovered J.B. Watson and was sold on behaviorism."

To his intense disappointment, Maslow found in Wisconsin that the University catalog had erroneously listed famous professors with whom he wanted to study, whereas they were only visiting academics. But studying under Thorndike, Clark Hull, and Harry Nelson, he finished

his Ph.D. with a dissertation on an observational study of sexual behavior among monkeys. From animal behavior, Maslow switched to the study of human behavior and wrote a paper which became an integration of Freud and Adler.

The man who liked "discovery, not proving," discovered also in the writings of Whitehead, Bergson, and Bertalanffy, the intellectual foundations for his latter humanistic views. While formal classes and famous teachers failed to mould him into a confirmed behaviorist, the birth of his baby came as a "thunderclap that settled things." He remarked once: "I'd say that anyone who had a baby couldn't be a behaviorist."[93] Personal experiences during this period exerted an enormous influence in shaping Maslow's future orientations in humanism; informal and personal contacts with Erich Fromm, Karen Horney, Ruth Benedict, Max Wertheimer, Alfred Adler, and others charted for him a growth-promoting developmental experience.

Maslow taught psychology in Wisconsin from 1930 to 1935, and at Columbia University for another two years; he also served at Brooklyn college as associate professor until 1951. He became a professor and chairman of the department of psychology at Brandeis University in 1951, and remained in this post until shortly before his death. Taking a leave of absence from Brandeis in March 1969, Maslow accepted a four-year grant from the W.P. Laughlin Foundation (which was later renamed International Study

Project) to study the philosophy of democratic politics, economics, and ethics generated by humanistic psychology. While he was working in California with the Foundation, Maslow died on June 8, 1970.

Major Works of Maslow

The major works of Maslow are the following: Motivation and Personality (1954), Toward a Psychology of Being (1962), and The Psychology of Science: A Reconnaissance (1968). He co-authored with Bela Mittelman on Principles of Abnormal Psychology (1941), and wrote a number of papers like "A Theory of Human Motivation" (1943), "Self-Actualizing People: A Study of Psychological Health" (1950), "Deficiency Motivation and Growth Motivation" (1955), and "Philosophy of Psycholgy" (1956), which went into a number of reprints.[94]

The main lines of Maslow's thought will be detailed in chapter III where they would provide the analytic perspective for the philosophical investigation of the IDI Model.

Relevance of Humanistic Psychology

Humanism, as a stance, is a positive evaluation and an article of faith in human capabilities that stand in contrast to those conceptualizations that are negative or neutral. Maslow's psychology provides a holistic view in the tradition of the Gestalt school and his views on such

areas as human nature, personality development, self-actualization, are analogous to the ethical considerations of a philosopher. As he indicated in his "Philosophy of Psychology," one should not allow the discipline of psychology to be cut adrift in the mainstream of philosophical investigation.

> I'm sorry that psychology has officially cut itself off from philosophy because this means no more than giving up good philosophies for bad ones. Every man living has a philosophy, an uncriticized, uncorrectable, unimprovable, unconscious one. If you want to improve it, and make it more realistic, more useful, and more fruitful, you have to be conscious of it, and work with it, criticize it, improve it. This most people (including most psychologists) don't do.[95]

Those who are adamant in holding that a philosophical system should be analytically interrelated and structurally whole, admitting neither apparent contradictions nor invalid generalizations, might find Maslow's humanistic psychology less than appetizing. Maslow himself noted:

> Humanistic psychology is essentially empirical and scientific in the sense of (a) the humble recognition of not knowing enough; (b) the expectation or faith that in part the salvation of mankind lies in the advancement of knowledge; (c) the Socratic notion that the advancement of knowledge--especially of persons--automatically improves human and social values; (d) the idea that knowledge can improve in reliability, validity, pertinence, exactness, and in holistic interconnection and relevance.[96]

Unlike Dewey and James, who turned to philosophy from psychology, Maslow considered himself a researcher, a "scientist rather than an essayist or philosopher." He

added: "I feel myself very bound to and by the facts that I am trying to perceive, not to create."[97] Maslow's perceptions took on a bold claim to a "new vision" of the possibilities of human destiny and he must be given a hearing in educational circles, since its implications for education could be significant ones.[98]

James Finn, while speaking about a sense of direction to be given to industry, stated that, if no direction is given, it was inevitable that technology would take off on its own. He continued: "We will have lost a battle and a war; a war that can be won easily if you leave Okoboji with the determination to be on the side of human beings and the Bill of Rights no matter what."[99] Finn believed that the products and efforts of the industry should be concentrated on human beings and urged more to follow the lead of Carl Rogers and Abraham Maslow than B.F. Skinner and other behaviorists.

From these considerations, it becomes evident that the humanistic psychology of Abraham Maslow provides a suitable and worthwhile philosophical perspective to consider the decision processes of the IDI Model.

Integral Humanism

If medieval christendom is characterized by an "unconscious and unreflecting simplicity of man's response to the effusion of divine grace,"[100] Renaissance, Reformation, Rationalism and the Industrial Revolutions gave

birth to a secular civilization which severed itself more from God and ushered in an era of an anthropocentric rehabilitation of the creature.

Classical Renaissance humanism, as mentioned earlier, had indeed discovered the values of human liberty. The radical pessimism of Machiavelli had effected a cynical separation of politics and morality, contending that man is evil and that deception and use of power are legitimate in safeguarding oneself. Descartes made man a disembodied spirit and denied man's dependence upon nature which was seen as a soulless mechanism. Reformation had let loose upon the world egocenticism, a self-assertive individualism in search of salvation. Rousseau, the 'saint of the nature,' proclaimed that to live by instinct is natural and therefore right.

Jacques Maritain saw all these developments as necessary ingredients for a christian humanism to return to its creator. When the nineteenth century French philosopher August Comte established a nontheistic religion of humanity designed to promote social reform, the Swiss theologian Karl Barth, a century later, affirmed that there could be no humanism without the gospel. The flaw in classical humanism was not that it was humanist; but that it was anthropocentric.

The question of christian humanism is intimately linked with the question of the person, for if the person is a consciously unified being, or at least one who tries

consciously to attain a unity, then, an inner division between the christian and the human could not be tolerated. "It is not a question simply of balancing two realities of the same order, such as thought and action, or such as body and soul. But it is a matter of uniting two realities, the natural and the supernatural."[101]

A person is a unity of spiritual nature endowed with freedom of choice, said Jacques Maritain. In point of existence, a human being is at the same time a natural and supernatural being.[102] Maritain sees christian humanism as integrating all that is best in the humanist effort of the centuries. Even the great intuition of Marxist humanism is a redeeming feature, says Maritain, since it recognizes the estrangement of the proletariate from their true nature by being dispossessed of property and subordinated to material economic forces. In the Marxian approach, there exists "a great flash of truth" especially in its "religious" insight that the materialism of the bourgeois world had dehumanized both rich and poor alike, since in such a world people exist, not as persons, but as consumers.[103] The central error, however, both in Marxism and in earlier forms of christian humanism, was its humanistic conceptualization in an anthropocentric metaphysics.

Maritain sees the christian humanism of the anthropocentric epoch caught in a parallelogram of forces. "God and man stand together at the wheel of the ship of his

destiny, and so far as the direction is in his hands, it is not in the hands of God."[104] Thus, Maritain's 'Integral Humanism' recognizes the autonomy of the secular, while it also acknowledges the primacy of the spiritual.[105] This spiritual journey into the future does not allow people to turn their backs against the world, but rather man is rendered truly human and his original greatness made manifest when he participates in all that can enrich him in nature and history. "It at once demands that man make use of all the potentialities within him, his creative powers and the life of the reason, and labor to make the powers of the physical world the instrument of his freedom."[106]

For christians, Integral Humanism represents a new christendom "no longer sacral, but secular or lay" and a new humanism "that does not worship man but really and effectively respects human dignity and does justice to the integral demands of the person" and is truly <u>theo-centric</u>.[107]

The man who proposed 'Integral Humanism' was born exactly a century ago.

<u>Jacques Maritain (1882-1973)</u>

This noted French Catholic philosopher, one of the most renowned exponents of Thomism, was born in Paris on November 18, 1882. Educated in the Sorbonne where he met his future wife, Raïssa Oumansoff, Maritain was later instrumental in forming the <u>Cercle Thomiste</u> (Center for

Thomistic Study) which brought together a number of French intellectuals like Henri Bergson, André Gide, Jean Cocteau and Nikolai Berdyaev. Under the influence of Bergson and Leon Bloy, the Maritains became Catholics.

Maritain spent two years (1907-1908) in Heidelberg where he studied biology under Hans Driesch. Upon return to Paris, he spent three years directing the compilation of a Dictionary of Practical Life which gave him also the chance to ponder over philosophical problems. It was during this period that he turned to a deeper study of the writings of Aquinas. Maritain began his teaching career in 1912, in Paris. He also taught for many years at various universities in the United States and in Canada: at Toronto, Chicago, Princeton, Notre Dame, and Columbia. After World War II, he was appointed the French Ambassador to the Vatican. In 1948, he accepted the post of a professor at Princeton. After his wife's death in 1960, Maritain went to live with the Little Brothers of Jesus in Toulouse, France, in 1961, where he remained till his death on April 28, 1973.

It is difficult to think of a philosophical area to which Maritain did not contribute; he wrote textbooks (An Introduction to Philosophy) as well as masterpieces like Art and Scholasticism (1920), The Degrees of Knowledge (1937), Existence and the Existent (1947). Besides Science and Wisdom and Frontiers of Poetry, his work on

theological themes, The Peasant of Garonne (1966), are also notable.

In 1936, True Humanism was published; it was the expansion and revision of six lectures on "The Spiritual and Temporal Problems of a New Christendom" which Maritain had delivered two years earlier at the summer school of the University of Santander, Spain. In Thomistic spirit, Maritain traces in this book the historical development of western humanism to defend what remained in it of christian values, and to propose some solutions. 'The New Christendom' outlined in True Humanism (French title: Humanisme Intégral) is conceivable even in today's world, although conditions are far from being ideal.[108] The co-existence of believers and unbelievers in a temporal world is placed in a society that is distinguished by civil toleration, non-capitalist economy, rights of human personality, and 'fraternal community.' True Humanism to which a small number of corrections were added was again published under its more appropriate title, Integral Humanism, in 1968.

Relevance of Maritain's Integral Humanism

1. If Maslow's advocacy of a 'holistic' psychology was built on the premise that any consideration of human nature should take into account the wholeness of human personality with scientific adequacy, the thrust of Maritain's Integral Humanism is also directed at a conception of the person, not only within society, but also beyond

society. As within society, the human person is part of a larger whole and must recognize a common good--happiness, freedom and growth--to which individual interests may need to be sacrificed. From the second point of view, society must always respect an authority beyond its own; common good is not apart from individuals nor is it a sum total of individual goods, but rather to be realized in the community which is enriched by the growth and development of individual freedom.

The increasing and innovative assimilation of technology in the field of educational technology has raised among its professionals legitimate fears of dehumanization in education and the possible spectre of an erosion of values. Instead of marching to different drummers, educational technology needs to subject itself to some soul-searching inquiries that may reach out beyond the confining parameters of scientific accuracy. Maritain's integral humanism may provide such a framework for inquiry although its religious, political and social concerns my fail to involve educational technoloy directly and substantially.

2. The idea set forth in Integral Humanism does not subscribe to any particular ideology, but transcends culture and civilization. If the concern of educational technology is the facilitation of human learning, then the significance of Maritain's ideas need to be incorporated in a larger concern about the end and aim of education itself.

3. Inasmuch as educational technology is predominantly an American phenomenon, the relevance of the thoughts of this French thinker and philosopher on education in America may be reasonably questioned. But Maritain himself sees quite a close affinity between Integral Humanism and many aspects in the American body politic. When he wrote the book, the perspective for a new christendom was definitely European, Maritain said, but over the years he became aware of the kind of congeniality which existed between what is going on in the U.S.A. and a number of views he had expressed in his book. In Reflections on America (1958), Maritain wrote that the concrete historical ideal of integral humanism was different from any reality then existent. But from the direction of certain essential trends characteristic of American civilization, it appeared to him that Humanisme Intégral "had, so to speak, an affinity with the American climate by anticipation."[109]

Because of these considerations, Jacques Maritain's Integral Humanism would provide the second humanistic perspective for the study of the I.D. Model.

INSTRUCTIONAL DEVELOPMENT INSTITUTE

Systems Approach in ID

The systems approach to designing instruction was adopted by the instructional development movement "which synthesized these concepts with those from the behavioral

sciences to create a formalized approach to how instruction is technology developed within educational technology."[110]

As mentioned earlier, along with communications, technological and systems approach concepts provided a powerful paradigmatic direction for the emerging profession of educational technology. The emerging theoretical framework of instructional development synthesized and formalized many of the concepts that were integral to these paradigmatic changes: process, systems approach, functions. This framework also helped in expanding and indicating relationships among behavioral objectives, use of appropriate human and nonhuman resources, criterion-referenced tests, appropriate use of individualized instruction, development of complete instructional systems, emphasis on the learner, evaluation and revision of instructional products after prototype testing, and systems management. These systematic processes of instructional development were presented in the form of models. Although no universally accepted model existed, the IDI Model contained elements and sequences which, either explicitly or implicitly, were found in most other models.

NSMI and UCIDT Prorams

The National Special Media Institute (NSMI), a consortium of institutions with strong programs in instructional technology, was established in 1965; it shifted its

primary focus, in 1969-70, from training institute directors in higher education institutions, to work with public school systems on the principles and procedures of instructional development.

Following its change in focus, in 1973-74, NSMI also changed its name to Instructional Development Institutes (IDI). The IDI and related programs were established under the aegis of the University Consortium of Instructional Development and Technology (UCIDT). Participating members of this Consortium at that time were Syracuse University, University of Southern California (USC), Michigan State University (MSU), and the Teaching Research Division of the Oregon State System of Higher Education. Representing these universities were James Finn (USC), Charles Schuller (MSU), Donald Ely (Syracuse U.), and Jack Edling (Teaching Research); later, when Jack Edling accepted a post with the U.S. International University in San Diego, many of his staff members "went along with him," and, subsequently U.S. International University in San Diego, CA., became the fourth member of the UCIDT, in place of Teaching Research.[111]

Early Beginnings of the IDI Program

The NDEA had provided the initial funding to launch the National Special Media Institute (NSMI) in 1965. With additional grants provided in 1970, by the Bureau of Libraries and Educational Technology of the U.S. Office of

Education, the institutions connected with the NSMI set to work on the IDI program.[112]

The rationale for this project rested in the conviction that the problems confronting education were multitudinous and that few viable solutions were to be found. This was understandable for the following reasons:

(i) Sound solutions require careful diagnois and specification of the problem. Complex educational problems defied facile simplifications and the task of ferreting out deep-rooted causes of these problems was often time-consuming and, generally, beyond the competence and ambit of school systems.

(ii) Valid solutions to complex problems involved risk, trial and error, revision and retrial. This is an arduous task which educators from various school systems were unwilling to subject themselves to. It was apparent that these school systems required expert outside assistance in finding and learning a practical system which would enable them to deal with educational problems in their school districts effectively and efficiently.

The IDI program was planned and developed to be such a system to meet these needs. Briefly described, the IDI program involved -

(a) careful analysis and identification of what the problem really was,
(b) the formulation of specific objectives,
(c) assessment of management requirements,
(d) the development, testing, and selection among viable solutions,

(e) tryout, revision, and retesting of the solution, and
(f) continuing evaluation of the system as a whole, as well as its constitutive elements.[113]

The IDI Program Objectives

The IDI Progrm was developed to achieve the following objectives:

1. Cooperative Action: Instead of aiming at either the administration or the teachers alone, the IDI Program was designed to produce instuctional development teams at the institutions where it was run. A team included Teachers, Administrators, Board Members, and Specialists in related instructional specialties, and the team, originally, was called the TABS team, so labelled after the first letter of each of these groups. It was soon found that the term 'Board Members' was too restrictive and narrow to allow the policy-making capabilities and inputs from other experienced personnel, such as assistant superintendents of the school system, or even an informed citizen committed to instructional innovation, into the ID process. Accordingly, a year later, the term "Policy Makers" substituted "Board Members" and TABS team became TAPS team.

2. Multiplier Plan: The IDI program was designed to be free-standing so that it could be used effectively by other agencies with school systems in their respective

areas. This was accomplished through a comprehensive "How To" Management Guide for those who would run the IDI. Developers of the IDI concentrated on using a wide variety of media and learning techniques including simulations. Instructional Development Multiplier (IDM) agencies were trained and were further assisted until they could operate institutes on their own and train other multipliers. These IDMs and their trainees--IDM/Ts--received complete IDI training "packages" along with further assistance from UCIDT members during the conducting of the initial institutes during 1971-72. The IDI was planned to grow in geometric progression.

The IDI Prototype Testing Program

It was obvious that prior to an effective nation-wide application, the IDI training packages had to undergo rigorous design, development, field testing and revision, first as separate components, and later, as a whole under varying field conditions. The UCIDT members were assigned separate modules and were obligated to design, develop, and evaluate their respective system modules before combining them for integrated field tests.

These were field-tested in prototype institutes in Detroit (1970), Phoenix (1971), and Atlanta (1971). A final training session for Multiplier Agency teams was also scheduled to be held at Syracuse University.[114]

DETROIT (1970)

The first tryout was scheduled for the Detroit Public School System in October, 1970.[115] Selected representatives from the TAPS team of Detroit were the participants. The IDI program consisted of a seven-day, 40-hour series with somewhat rigorous training experiences for the participants. At the conclusion of the Institute, each participating team was expected to develop a feasible plan for attacking a local problem of their choice. As would be expected, in prototype tryout difficulties developed and not all of the components of the IDI worked with complete satisfaction. The general structure of the entire IDI program had to be set in a suitable framework so that the participants in the IDI program could be affectively and attitudinally influenced to accept this innovative practice. A basic synthesis of various components was slowly emerging and the section on "Stage III: Evaluation" was simplified; improvements were also incorporated by shortening time for discussions and, thus, tightening the schedule itself. Evaluation of the IDI program indicated that a good share of the IDI needed further development.

PHOENIX (1971)

The Bureau of Indian Affairs school at Phoenix participated in the second field test in February 1971. This trial was extended over a two-week period to investigate this strategy as an alternative. Many of the conceptual problems

with training modules, identified in the Detroit tryout, were ironed out; some specific problems, however, concerning prototype testing remained, but these were mainly logistical and programmatic.

ATLANTA (1971)

The participants were from the Atlanta Public Schools and the time was June 1971, immediately after the beginning of summer vacation; predictably, participants entered with low motivation since their required attendance pushed their vacation date back. Hectic schedules were attended to by the UCIDT coordinators as they continued module revisions and were trained to manage the institute. The development of the IDI was fairly complete except for the revision and tightening up of the components in the Coordinator's Manual. In the final moments, everything fell into place and the program proceeded smoothly. At the conclusion of this program, the participants stood up as one and applauded the organizing UCIDT teams for their excellent performance and the conclusive results it produced.

At Syracuse University the seven-day IDI Program was implemented on an expanded schedule, i.e., over several weeks. This appeared to affect program effectiveness and, eventually, the expanded schedule was replaced with the 40-hour, five-day program. The five-day IDI program was essentially achieved by lengthening the work hours of the seven-day program. The major reason for this revision was

logistical: school systems could better accommodate a five-day format for its personnel to participate in the IDI program and, further, it also suited their budget constraints (See FIGURE 1).

The IDI programs, so far, have been given in approximately 40 states including Michigan, Wisconsin, Minnesota, Ohio, Louisiana, Texas, Indiana, Florida, as well as Puerto Rico, Iran, Philippines, Mexico, Netherlands, and Okinawa, Japan. In the glory years of the IDI program from 1972 to 1974, dedicated UCIDT members either organized or helped to organize numerous programs by travelling away from their own campuses for long periods.

Current Activities of UCIDT

Over the years, the IDI program has lost some of the vigor, acuity and comprehensiveness of its original application, mainly due to budget cuts in educational spending and the competitive edge of industry and other programs in the increasing technology in education. In 1974, the UCIDT revised the IDI with a tryout in Lansing, Michigan. While the basic model of the IDI remained intact in this Lansing tryout, emphases were added in some components with additional modules in diffusion, needs assessment, management and evaluation. These individual units were designed to be free-standing modules and discretely packaged that they could be used either sequentially or separately. This

FIGURE 1

INSTRUCTIONAL DEVELOPMENT INSTITUTE

The Five-Day Schedule

DAY 1 - Introduction, motivational session incorporating a series of 16 mm films, slide/tape and game on distinctive alternatives in education, followed by small group discussion. Introduction to systems approach, introduction to to ID process; game sequence introducing the concept of team work.

DAY 2 - Concept of change in small group discussions. Innovation Interaction Game through which participants are introduced to Stage I: DEFINE of the ID process.

DAY 3 - Films on "Analyze Setting" and "Organize Management" Functions in the ID Model. Stage I: DEFINE is concluded. Slide/tape and discussion on the Norwalk-LaMirada School ID program and review of activities. IDI participants are divided into TAPS teams and begin work on decision points; they work on a feasible instructional plan for their school district.

DAY 4 - Introduction to Stage II: DEVELOP with Objective Marketplace Game (game on behavioral objectives). Mediated examples of the use and misuse of objectives. Series of slide/tapes on the design and development of a prototype solution.

DAY 5 - Introduction to Stage III: EVALUATE which is carried through Functions 7, 8, and 9. By mid-day, the various TAPS teams will have developed feasible plans for instructional development to be carried back to their school districts for eventual implementation. Debriefing; Closing and Synthesis.

was intended to meet the specific needs of various school systems that could not opt for the five-day IDI program package.

The UCIDT continues to offer in-service training programs, in a number of areas like diffusion strategies, managing ID and evaluating ID, in one-day sessions across the country. Three newcomers to the original UCIDT are Indiana University (joined in 1973-74, when NSMI became IDI), Florida State University (joined in 1979), and Arizona State University (joined in 1981). The University of Georgia became an associate member in 1982. These are represented through their departments of Instructional Development and Technology. The five-day, 40-hour IDI sessions are normally offered as regular courses in some of these eight universities. The purpose of the consortium still remains the offer of a level and quality of professional service in instructional development and technology, a task which would be impossible through a single or lesser combination of these institutions.

The Instructional Development Model

A review of the instructional development model-building literature reveals various efforts by enterprising instructional technologists to develop instructional systems through a systematic process which aims, through the application of the systems approach, at developing feasible solutions to identified teaching and learning

problems.[116] Most of the significant Instructional Development (ID) Models have been developed and reported in the professional literature of media specialists over the past 15 years. Some of the better known are: The Barson Model (1965), The Kaufman Model (1968), The Childs Model (1968), The Banathy Model (1968), The Stowe Model (1968), The Briggs Model (1970), The Gustafson Model (1970), The Gerlach-Ely Model (1971), The Douglas Model (1971), The Kemp Model (1971), and the Hamreus Model (1968) which was the forerunner of the IDI Model on which this study is based.[117]

Why there should be so many variations purporting to be instructional development models can be seen easily when one realizes that a model can be enhanced through progressive evolution in removing structural flaws, in improving sequences, in tending to be comprehensive, and in being descriptive to account for all relational elements. They also attest to the earnestness and keenness of model developers in perfecting models that are heuristically important, effective, efficient and relevant in instructional development.

Some of the deficiencies in this model-building activity can be briefly stated as follows:

1. Various steps of the model are not specific enough;
2. Operational value is limited;
3. Model lacks comprehensiveness;
4. Model is largely seen as a linear process;
5. Feedback loop is absent;

6. Flowchart steps are incomplete, or flowchart components are not adequately described;
7. Process efficiency is assumed to be achievable by one instructor, instead of a team of specialists.

The present study is more concerned with IDI Model and its forerunner, the Hamreus Model.

The Hamreus Model (1968)

Dale Hamreus graphically displayed a 22-step model of an instructional system which were distributed into the following three distinct stages: (1) systems definition and management, (2) design analysis, and (3) development and assessment (See FIGURE 2).

> STAGE 1: SYSTEMS DEFINITION AND MANAGEMENT--pertains to those start-up or lead-in activities that must be planned and organized before the detailed tasks of designing and developing the actual instructional system can begin.[118]
>
> STAGE 2: DESIGN ANALYSIS--defines the necessary techniques for specifying performance standards, specification of materials, and design and operational constraints imposed by the educational industry.
>
> STAGE 3: DEVELOPMENT AND ASSESSMENT--provides for empirical prototype testing including all necessary content, media, and methods. "Corrective iteration of all aspects of development and evaluation is continued until the instructional technologist is satisfied with the validity of the new system."

A feedback line indicates that information from Stage 3 is important for the other two stages as a way of providing some organized means of quality control.

Within the three major stages are twenty-two precise

FIGURE 2 THE HAMREUS MODEL (1968)

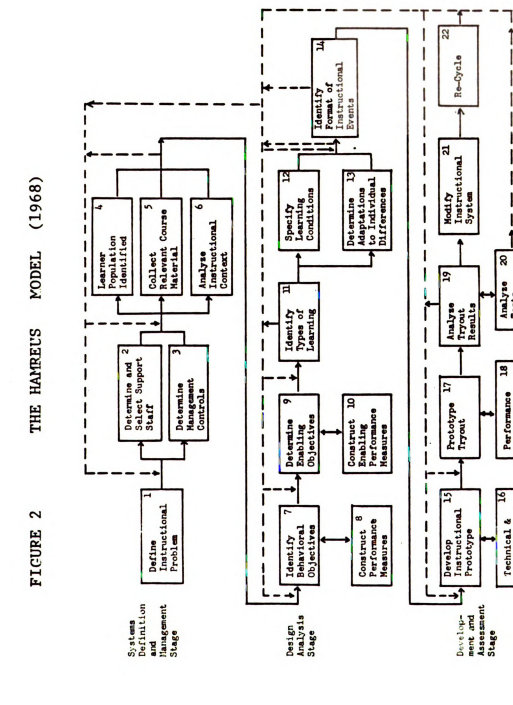


Figure Flow diagram showing the specific steps of the Systems Approach in developing instructional systems

steps which must be considered by instructional developers when applying the Hamreus model. They provide an interpretation of the tasks to be completed within each of these steps.

While Hamreus was the first to detail the input and task information at each of these twenty-two steps, the "explanations are not comprehensive enough to be of maximum operational value."[119]

Instructional Development Institute (IDI) Model

The NSMI instructional technologists condensed the twenty-two steps of the Hamreus Model into the nine steps across three stages (DEFINE, DEVELOP, and EVALUATE) to formulate the IDI Model (See FIGURE 3). The reason for this condensation was due to the complexity of the Hamreus Model (and most others) that went beyond the comprehension of the learners. Given the short duration of the IDI (40 hours), it was important, early on, to give a clear concept of "systems approach." Users are guided through the nine functions by attending to twenty-four decision points. At the close of the workshop, the participants to the IDI program were expected to have not only learned the instructional development process, but, in the bargain, to have also come up with a solution to an existing problem affecting the educational practices of their school district.

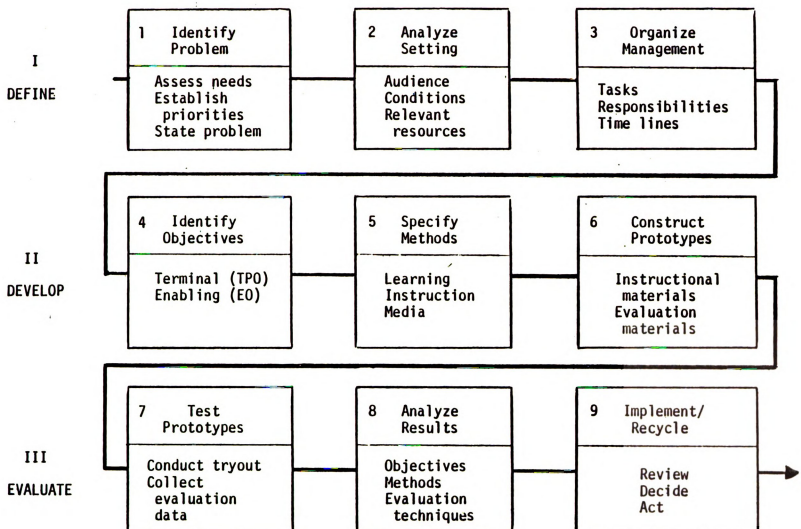


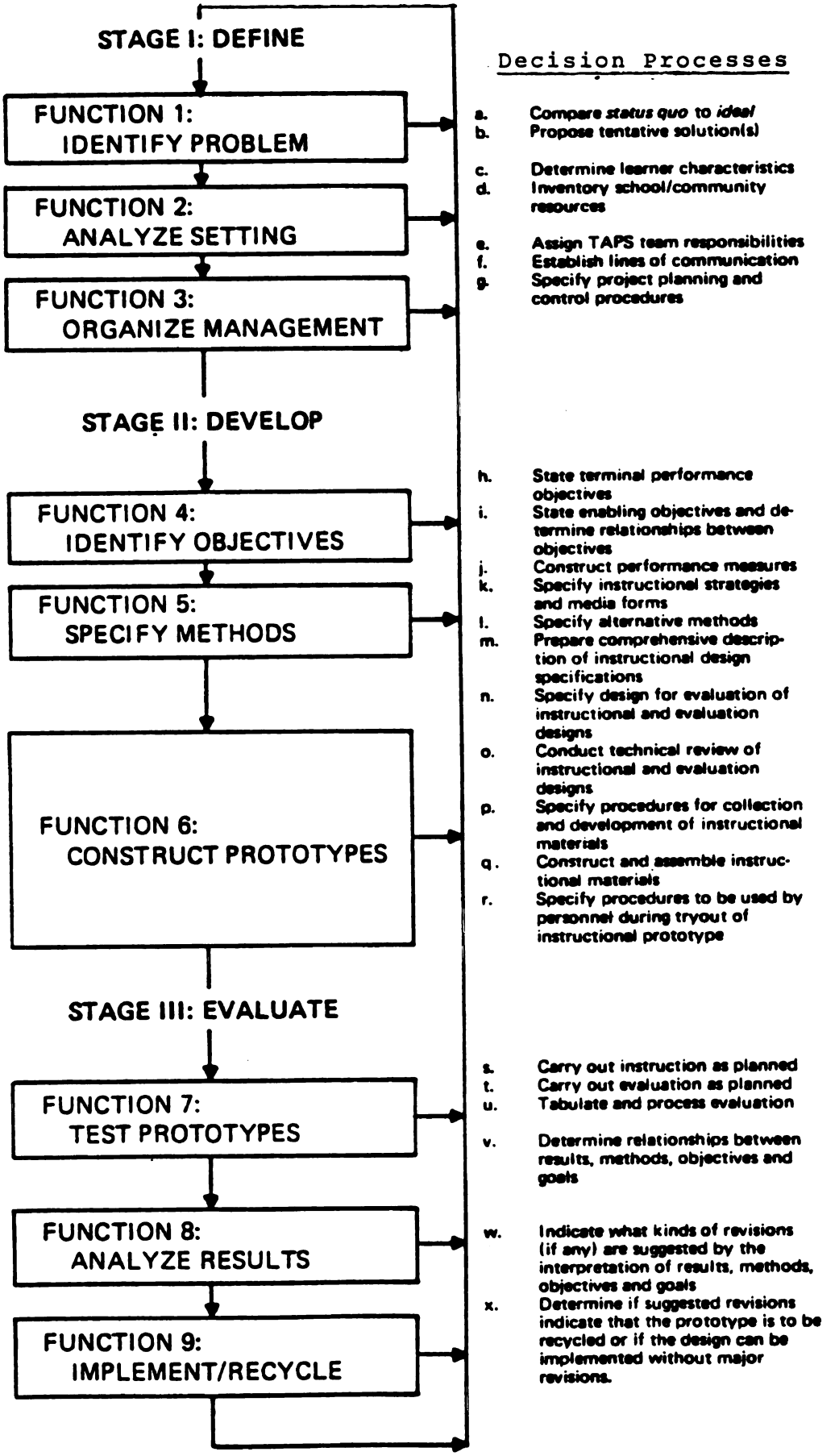
Figure 3 IDI Model (Instructional Development Institutes, UCIDT, 1971).

The IDI Model, according to Stamas, exhibits a sequential order and may suffer from a lack of feedback. The Gustafson Model (1971), a variation of the IDI Model, would correct this deficiency by making it a dynamic and non-linear process; further, it would underscore the importance of human factors which assures success for the IDI Model. But this improvement has not been incorporated into the IDI Model in theory.[120]

The twenty-four decision processes of the IDI Model representing the instructional development process selected for this study have been subjected to a philosophical investigation (See FIGURE 4). While introducing his instructional development model, Hamreus suggested that the strategy and technology employed in achieving educational objectives have not finally arrived, but one must consider it as "just scratching the surface of man's ability to learn."[121] The IDI Model is not touted to be the panacea for all the instructional ills that have been plaguing the educational enterprise. Behavioral technologists have been struggling to tighten up this means-end incongruity and still vast amounts of information and technical know-how are required to bridge this gap. It was an attempt "to get the most out of our educational plans." He further stated:

> Today's behavioral technologists who know what the systems approach is in developing instructional systems, might find the question "why" systems approach rather academic. They know that on organized, systematic approach to instructional development is essential to the production an instructional system that works; i.e., one

FIGURE 4 TWENTY-FOUR DECISION PROCESSES OF IDI MODEL



> that achieves its objective. To a novice, however, neither the "what" nor the "why" of systems approach are of general knowledge.[122]

If this statement evidences a flavor of dehumanization, Hamreus dismisses this concern as unfounded. He sees the systems approach as an enhancement of human interactions in the learning proces. But when the "what" and "how" of this model have been sufficiently explained, an educational philosopher is still entitled to ask "why?"

There may be value questions and axiological truths that still need to be posed. A philosophical investigation from the humanist and pragmatist viewpoints, may provide some perspectives to better understand the IDI Model and, in the process, also hold out the promise for similar inquiries not only connected with the IDI Model but also other aspects of instructional and educational technology.

The twenty-four decision processes will be treated in detail in Chapter IV, along with their philosophical implications.

In this chapter, we have so far discussed the origins of educational technology with a view to accentuate its quest for an organized body of theoretical formulations constantly expanding by research. Then we directed our attention to the consideration of pragmatism, humanism, and the IDI Model to provide a contextual relief against which the present study will be conducted.

It is time now to formulate other relevant concerns

like literature support, precedents of the study, implications of the study, and its limitations.

LITERATURE SUPPORT

While the specific topic proposed in this study has not been previously investigated, there is an abundance of literature consisting of the writings of philosophers from both the humanist and pragmatist camps, critical essays on the relative merits of these philosophical positions, commentaries, journal articles, and other scholarly work to initiate and sustain a selective study of these schools of philosophy.

Since the focus of the present study is the influence and impact of these philosophical systems on instructional technology, specifically on decision processes within the IDI Model as evidenced in their explicit and/or implicit assumptions, a relevant literature search included the history of the design, development, and evaluation of the instructional development process, and the major theoretical concepts, principles, and practices of educational technology.

PRECEDENTS FOR THE STUDY

No precedents for the present study have been reported. Theoretical studies that investigated the philosophical assumptions underlying practices in the field of

instructional development and technology are rare. A comparative study of the influx of distinctive philosophical systems in the area of both instructional and educational technology appears to be nonexistent.

A computer search of Dissertation Abstracts International generated 39 citations under on descriptor, "Instructional Technology"; a total of 32 dissertations were found that included the term "educational tachnology" in their titles. But a cross-search employing the terms "instructional technology," "educational technology" with the terms "pragmatism" and/or "humanism" yield no citations at all. Descriptors like "instructional development," "educational development," "instructional systems," and "systems" were similarly unsuccessful in providing any substantive cues for a fruitful research.

A similar computer search of the ERIC system did not generate any evidence of research done in the area of concern in this study.

The conclusion drawn from a thorough search of the literature is that a comparative examination of the philosophical assumptions of both humanism and pragmatism with regard to instructional development has not yet been undertaken, prior to this study.

IMPLICATIONS OF THE STUDY

The following are some of the concerns that need to be taken into account by instructional developers.

1. Instructional developers need to know the implications of their decisions when advocating one philosophy, rather than another. It is assumed that their personal philosophies, implicit in their actions, act as a screening device through which their individual decisions are filtered.

2. Instructional developers may be inconsistent in decision making as a result of inadequate conceptualizing of philosophical positions. These eclectic philosophical positions may be chosen with a view to achieving effectiveness, efficiency, and relevance in discovering instructional solutions, or even through inadequate understanding of the postions. Understanding how their decisions relate to a specific philosophical position will be a valuable insight.

3. If any instructional developer proposes to adhere consistently to a given philosophy which, then, becomes the guiding pattern in his or her professional life, this person needs to understand its implications in professional life in order to respond to decision making situations appropriately.

LIMITATIONS OF THE STUDY

This study does not purport to undertake an exhaustive and comprehensive study of the philosophical systems of pragmatism and humanism, nor of their total impact on all aspects of educational technology. Though it seeks to cut

fresh ground through a pioneering effort of the nature of a philosophical investigation, this study is limited by constraints of scope and time to a philosophical analysis of a specific instructional development model.

There are further limitations.

1. The philosophical investigation of the present study is limited by choice rather than by design to the consideration of the philosophies of humanism and pragmatism.

2. Since "humanism" is a generic term incorporating in itself many shades of that philosophy, such as scientific humanism, integral humanism, naturalistic humanism, and democratic humanism, no effort will be made to label these philosophies as such, although their theories, opinions, and conclusions will be discussed.

3. Humanism and pragmatism are not viewed as two disparate entities, diametrically opposed to each other, but rather as distinctive, and, sometimes, epistemologically contiguous. Subsequently, a particular philosopher may be assumed to belong in some instances to both camps, due to similarities in philosophical positions. This possibility is not totally excluded.

4. Even though the field of educational technology is more comprehensive, the foci of interest of the study are provided by instructional technology which is subset of educational technology, and in which learning/teaching is "purposive and controlled."

5. This study is more accurately viewed as an inchoate philosophical investigation that endeavors to chart unexplored fields in educational technology, as a first in a series of more refined, articulate and incisive studies which will make these philosophical assumptions more explicit, describe the educational phenomena as well as explain them, and hopefully, predict outcomes. Obviously, this is a task of a magnitude requiring the efforts of many scholarly researchers. For the present, however, this study is intended to be a moving target for future researchers who would advance and elaborate scientific research by initiating new and fruitful methodologies. To quote Hebb, "a good theory is one that holds together long enough to get you a better theory."[123]

SUMMARY

This chapter has presented, in a condensed form, the history of the origins and progress of educational technology and its search for professional maturity through a theoretical body of scientific findings. In this light, a new approach involving a philosophical investigation toward theory buidling looked feasible and desirable. The various definitions, brief histories, and the impact of pragmatism and humanism to an analytic study of the IDI Model was then discussed. In the next chapter, attention will be directed to the design of the study itself.

FOOTNOTES

[1]The 24 decision making steps of the IDI Model are usually referred to as decision points, whereas they are more aptly termed as processes. This study will, accordingly, refer to them as decision processes or steps.

[2]Paul Saettler, A History of Instructional Technology (New York: McGraw Hill Book Co., 1968).

[3]Saettler, ibid., p. 42.

[4]Clinton J. Wallington, "A Theoretical Construct for the Application of the Concept of New Careers to Instructional Technology." (Doctoral Dissertation, University of Southern California, 1974), p. 15.

[5]Ely, ibid., p. 83.

[6]James D. Finn, The Teacher and Technology, 16 mm film, b&w, sound (Columbus, Ohio: Motion Picture Division, The Ohio State University, 1967).

[7]Saettler, ibid., p. 53.

[8]Edward L. Thorndike, Education: A First Book (New York: MacMillan, 1912), pp. 164-66.

[9]Edward L. Thorndike, Education Psychology, 2 vols. Vol. II The Psychology of Learning (New York: Teacher's College, Columbia University, 1913), p. 4.

[10]B.F. Skinner, "The Science of Learning and the Art of Teaching" Harvard Educational Review, 24 (Spring 1954): 94.

[11]ibid., p. 97.

[12]S.L. Pressey, "A Third and Fourth Contribution Toward the Coming Industrial Revolution in Education," School and Society 36 (1932): 672.

[13]Snelbecker, ibid., p. 392.

[14]AECT, A Statement of Definition, p. 38.

[15]ibid.

[16]William Allen, "Research on the New Educational Media: Summary and Problems," AVCR 7 (Spring 1959): 86.

[17]William Allen, "Instructional Television Research: Past, Present and Future," AVCR (Spring 1971): 6.

[18]James Finn, "Dialog in Search of Relevance" in Selected Writings, ed. by Ronald J. McBeath (Washington, D.C.: AECT, 1972), p. 305.

[19]John R. Gunther, "Technology, Philosophy and Education" in To Improve Learning, ed. by Sidney G. Tickton, vol. II (New York: R.R. Bowker, 1970), p. 81.

[20]Snelbecker, ibid., p. 411.

[21]Charles F. Hoban, "A Systems Approach to Audio-visual Communications," Keynote address at the Lake Okoboji Audiovisual Leadership Conference, August, 1956 (Iowa City: University of Iowa, 1956).

[22]Harold D. Lasswell, "Communications as an Emerging Discipline," AVCR 6 (Fall 1958): 245.

[23]Ely, ibid., p. 86.

[24]Commission on Instructional Technology, "Report to the President of the United States," in To Improve Learning, ed. by Sidney G. Tickton (New York: R.R. Bowker Co., 1970), p. 21.

[25]James Finn, "AV Development and the Concept of Systems," Teaching Tools 3 (Fall 1956), p. 164.

[26]ibid.

[27]John Kenneth Galbraith, The New Industrial State (Boston: Houghton, Mifflin 1967), p. 12.

[28]James Finn, "Dialog in Search of Relevance," in Selected Writings, ed. Ronald J. McBeath (Washington D.C.: AECT, 1972), p. 304.

[29]Finn, ibid., p. 258.

[30]AECT, Definition and Glossary of Terms, p. 1.

[31]ATI = Aptitude-Treatment Interaction,
TTI = Trait-Treatment Interaction,
CAI = Computer-Assisted Interaction, and
CBE = Computer-Based Interaction.

[32]Hawkridge, ibid., p. 8.

[33]Hawkridge, ibid., p. 27.

[34]Van Cleve Morris, Philosophy and the American School: An Introduction to the Philosophy of Education (Boston: Houghton, Mifflin, 1961), p. 8.

[35]De Anima, II, 5, 417b22.

[36]Nicholas Rescher, Methodological Pragmatism (Oxford: Basil Blackwell, 1977), p. 298-99.

[37]William Clifford Kingdon in Contemporary Review 30 (January 1877); quoted in John Passmore, A Hundred Years of Philosophy (London: Penguin Books, 1972), p. 95.

[38]Immanuel Kant, Critique of Pure Reason, tr. Norman Kemp Smith (New York: The Humanities Press, 1929), p. 312. A 824 = B 852.

[39]Quoted in Passmore, ibid., p. 100.

[40]William James, Pragmatism and Four Essays from the Theory of Meaning (New York: New American Library, 1909; A Meridian Book, 1974), p. 43 [Unless otherwise indicated, further references to Pragmatism will be from this 1974 volume.]

[41]Charles Sanders Peirce, Collected Papers of Charles Sanders Peirce, 8 vols., vols. 1-6 ed. by Charles Hartshorne and Paul Weiss (1931-35); vols. 7-8 ed. by A.W. Burke (1958) (Cambridge, Mass.: Harvard University Press, 1931-58), 5.412. [In references to Peirce, the general practice is to indicate first the volume and then the paragraph number of this edition. Accordingly, a reference to volume 5, paragraph 102, will be indicated as 5.102, etc.]

[42]James, ibid.

[43]Charles S. Peirce, "How to Make Our Ideas Clear," Popular Science Monthly 12 (January 1878): 286-302. Reprinted in Peirce, Collected Papers, 5.388-410.

[44]Philip P. Wiener, Evolution and the Founders of Pragmatism (Cambridge, Mass.: Harvard University Press, 1949); Max. H. Fisch, "Alexander Bain and the Genealogy of Pragmatism," Journal of the History of Ideas 15 (1954): 413-44; Max H. Fisch, "Was There a Metaphysical Club at Cambridge?" in Studies in the Philosophy of C.S. Peirce Series No. 2 (Amherst: University of Massachusetts Press, 1964): 3-32.

[45]James, Pragmatism, p. 18.

[46]Peirce, Collected Papers, 5.396.

[47]ibid.

[48]Peirce, Collected Papers, 5.402.

[49]William James, Pragmatism (Cambridge, Mass.: Harvard University Press, 1975), p. 259.

[50]For a detailed and authoritative study of the various versions, see "The Text of Pragmatism," in James, Pragmatism (1975), pp. 185-201.

[51]Arthur O. Lovejoy, The Thirteen Pragmatisms and Other Essays (Baltimore: John Hopkins Press, 1963), p. 290.

[52]F.C.S. Schiller, "William James and the Making of Pragmatism," The Personalist 8 (1927): 92.

[53]A.J. Ayer, Introduction to Pragmatism by William James (Cambridge, Mass.: Harvard University Pres, 1978), p. ix.

[54]James, Pragmatism, p. 46.

[55]Josiah Royce, "Charles Sanders Peirce: Peirce as a Philosopher," Journal of Philosophy, Psychology and Scientific Methods 13 (December 21, 1916): 707.

[56]Patrick K. Dooley, Pragmatism as Humanism: The Philosophy of William James (Chicago: Nelson-Hall, 1974), p. 5.

[57]William James, The Principles of Psychology, 2 vols. (New York: Henry Holt, 1890), p. I: 243.

[58]Ralph Barton Perry, The Thought and Character of William James. 2 vols. (Boston: Atlantic Monthly Press, 1920), p. II: 238.

[59]William James, The Letters of William James, ed. Henry James, 2 vols. (Boston: Atlantic Monthly Press, 1920), p. II: 238.

[60]William James, A Pluralistic Universe, (New York: Longmans, Green and Co., 1932), p. 250-51.

[61]James, Pragmatism, p. 13.

[62]The New Encyclopaedia Britannica, 15th edition, 1981, s.v. "History of Humanistic Scholarship."

[63]ibid.

[64]Myron P. Gilmore, The World of Humanism: 1453-1517 (New York: Harper & Row Publishers, 1952), p. 186.

[65]Gilmore, ibid., p. 201.

[66]Giuseppe Toffanin, History of Humanism, English translation, foreword, and augmented bibliography by Elio Gianturco (New York: Las Americas Publishing, 1954), p. xxiii.

[67]Gilmore, ibid., p. 133.

[68]George Novack, Humanism and Socialism (New York: Pathfinder Press, 1973), p. 106.

[69]Lamont, ibid., p. 21.

[70]Sidney Hook, "The Snare of Definitions," Humanist Alternative: Some Definitions of Humanism, ed. Paul Kurtz (Buffalo, NY: Prometheus Books, 1973), pp: 31-34.

[71]H.J. Blackham, "A Definition of Humanism," in Humanist Alternative: Some Definitions of Humanism, ed. Paul Kurtz, (Buffalo, NY: Prometheus Books, 1973), p. 35.

[72]J.P. Van Praag, "What is Humanism?" in Humanist Alternative: Some Definitions of Humanism, ed. Paul Kurtz, p. 43.

[73]Hook, "The Snare of Definitions," in Humanist Alternative, p. 34.

[74]Corliss Lamont, The Philosophy of Humanism, Foreword by Edwin H. Wilson, 5th ed., rev., and enlarged (New York: Frederick Ungar Publishing, 1965), p. 22.

[75]Corliss lamont, "Naturalistic Humanism," in Humanist Alternative, ed. Paul Kurtz, (Buffalo, NY: Prometheus Books, 1973), p. 129.

[76]J.B. Coates, A Challenge to Christianity (London: Watts, 1958), p. 18.

[77]Ray Wood Sellars, "The Humanist Outlook," in The Humanist Alternative: Some Definitions of Humanism, ed. Paul Kurtz, (Buffalo, NY: Prometheus Books, 1973), p. 139.

[78]J. David Hoeveler, Jr., The New Humanism: A Critique of Modern America: 1900-1904 (Charlottsville: University Press of Virginia, 1977), p. 13.

[79]Jacques Maritain, True Humanism, 5th ed., Trans. M.R. Adamson (London: Geoffrey Bles, 1950), p. 73.

[80]Paul Kurtz, ed., The Humanist Alternative: Some Definitions of Humanism, (Buffalo, NY: Prometheus Books, 1973), p. 175.

[81]B.F. Skinner, "Humanism and Behaviorism," in The Humanist Alternative: Some Definitions of Humanism, ed. Paul Kurtz, (Buffalo, NY: Prometheus Books, 1973), p. 104.

[82]Abraham H. Maslow, "Some Educational Implications of the Humanistic Psychologies," Harvard Educational Review 38 (Fall 1969), p. 686.

[83]Abraham Maslow, The Psychology of Science (New York: Harper & Row, 1966), p. 7.

[84]Maslow, "Some Educational Implications," p. 686.

[85]Abraham Maslow, Motivation and Personality (New York: Harper & Row, 1954), p. 23.

[86]Abraham Maslow, "A Philosophy of Psychology," in Personal Problems and Psychological Frontiers, ed. J. Fairchild (Chicago: Sheridan, 1957), p. 232.

[87]Abraham Maslow, Abraham Maslow: A Memorial Volume, ed. International Study Project, compiled with assistance from Bertha G. Maslow (Monterey, CA: Brooks/Cole Publishing, 1972), p. 75.

[88]Maslow, "Some Educational Implications," p. 686.

[89]Maslow, Memorial Volume, p. 71.

[90]Maslow, "A Philosophy of Psychology," p. 236.

[91]ibid.

[92]Mary Harrington Hall, "Abraham Maslow," Psychology Today 2 (July 1968): 37.

[93]Hall, ibid., p. 37.

[94]For an exhaustive bibliography of Maslow's works, see Abraham Maslow: A Memorial Volume.

[95]Salvatore R. Maddi and Paul T. Costa, Humanism in Personology: Allport, Maslow, and Murray (Chicago: Aldine Atherton, 1972), p. 6.

[96]Abraham Maslow, A Memorial Volume, p. 63.

[97]ibid.

[98]Robert Earl MacDonald, "The Psychology of Abraham Maslow in Educational Perspective: Selected Criticisms and Applications," (Ph.D. Dissertation, Michigan State University, 1969), p. 3.

[99]Finn, Selected Writings, p. 306.

[100]Jacques Maritain, True Humanism, 5th ed., trans. by M.R. Adamson (London: Geoffrey Bles, 1950), p. 7.

[101]Yves de Montecheuil, "The Ideal of Christian Humanism," in Modern Catholic Thinkers: An Anthology, ed. Robert Caponegri (New York: Harper & Brothers, 1958), p. 97.

[102]Maritain, True Humanism, p. 3.

[103]Jacques Maritain, Freedom in the Modern World (New York: Scribner, 1936), p. 140.

[104]Maritain, True Humanism, p. 11.

[105]Jacques Maritain, Ransoming the Time, (New York: Charles Scribner's Sons, 1941), p. 115.

[106]Maritain, True Humanism, p. xii.

[107]Maritain, Integral Humanism: Temporal and Spiritual Problems of a New Christendom, tr. Joseph W. Evans (New York: Charles scribner's Sons, 1968), p. 7.

[108]Julie Kernan, Our Friend, Jacques Maritain: A Personal Memoir (Garden City, N.Y.: Doubleday, 1975), p. 108.

[109]Jacques Maritain, Reflections on America (New York: Scribner, 1958), pp. 174-75.

[110]AECT, Definition and Glossary of Terms, p. 46.

[111]Personal Interview with Dr. Bruce Miles, MSU, on August 20, 1982. Dr. Miles was UCIDT coordinator 1969-71.

[112]Conversation with Dr. Kent Gustafson on Oct. 6, 1982.

[113]"The National Special Media Institutes," in Media Manpower for the 70's: II Media Specialist Projects 1970-71, A Report of the Leadership Training Institute, ed. John L. Martinson (Menlo Park, CA.: Media Manpower, 1971), p. 47. ED 056 474.

[114]Walter A. Wittich and Charles F. Schuller, Instructionl Technology: Its Nature and Use, 5th ed. (New York: Harper and Row, 1973), p. 633.

[115]The author is indebted to Dr. Bruce Miles and Dr. Kent Gustafson for information concerning these sessions.

[116]Wittich and Schuller, Instructional Technology, p. 631.

[117]For a detailed analysis of these models, see Spelios Theodore Stamas, "A Descriptive Study of a Synthesized Operational Instructional Development Model, Reporting Its Effectivenes, Efficiency, and the Cognitive and Affective Influence of the Developmental Process on a Client" (Ph.D. dissertation, Michigan State University, 1972).

[118]Dale G. Hamreus, "The Systems approach to Instructional development," in The Contribution of Behavioral Science to instructional Technology: A Resource Book for Media Specialists (Monmouth, Oregon: Teaching Research Division of the Oregon State System of Higher Education, n.d.) p. I-16.

[119]Stamas, "Synthesized Operational ID Model," p. 115.

[120]Conversation with Dr. Kent Gustafson, Oct. 6, 1982.

[121]Hamreus, "Systems Approach to I.D.," p. I-2.

[122]Hamreus, "Systems Approach to I.D.," p. I-9.

[123]Donald Olding Hebb, Organization of Behavior: A Neuropsychological Theory (New York: Wiley, 1949), p. 27.

CHAPTER III

DESIGN OF THE STUDY

This chapter will deal with the methodology used for this philosophical study and the design of the study itself. It will further pose the question whether basic theory research could be furthered by an analytical philosophical study in the place of customary experimental studies. Studies in educational technology have in recent years slowed down its quest for fruitful theory building and concerned researchers are looking for fresh avenues and approaches. Educational concerns spill over strictly scientific concerns into ethical and moral domains and a philosophical study of instructional development, as an inchoate venture into fresh methodological approaches, is both feasible and desirable.

The chapter will then provide an explanation of the IDI Model literature which is to be examined and also of the pragmatist and humanist literature that are selected to conduct the examination. Since the philosophical concerns raised in the pragmatist and humanist schools selected for this study are generally found scattered over a number of books by these philosophers, i.e., Peirce and James for

Pragmatism, and Maritain and Maslow for Humanism, the salient features of these philosophies will be briefly formulated to provide a contextual relief against which the twenty-four decision processes of the IDI Model will be analyzed in Chapter IV. These will provide the essential criteria for assessing the philosophical strains in the IDI Model. Then the procedures which constitute the design of this study will be presented so that an orderly progression of the presentation of the data and their examination can be understood when pursuing Chapter IV.

RELEVANCE OF A PHILOSOPHICAL STUDY

As mentioned in Chapter I, educational technology, if it is to achieve the status of a complete and mature profession will have to progress as a specialization founded upon an organized body of intellectual theory constantly expanding by research.

Inadequacy of Experimental Studies

Simple and highly complex research activities have continued in the realm of educational technology, and, despite thousands of studies over the past fifty years of research activities, the profession itself has become highly self-critical about its achievements. Extravagant promises made by educational technologists have not been honored, nor have the new media made any significant impact on educational practices. "In the past, researchers and

designers have often confused the media that transmit instruction (e.g., television, books, teachers) with the strategies that promote learning and memory."[1] The fruitlessness of two decades of media research as documented by Chu and Schramm[2] confirmed the conventional wisdom that the instructional use of various media does not lead to more effective student learning. Similar conclusions were reached by Jamison, Suppes, and Wells[3] when they concluded that the primary reason for adopting any instructional innovations would be to make more productive use of available resources rather than to improve student achievement. Findings of this kind persuaded Dubin and Hedley to suggest that the educational uses of various media did not raise any "significant educational issues."[4] The important lesson that rang clear was that learners can learn from virtually all media. This led Salomon to an observation that something at least can be salvaged: "...When some special potentialities of some media are being capitalized upon, under some conditions some learners might benefit more in some areas."[5]

Concerns for Basic Research

If educational research represents activities aimed at the progressive development of an organized body of scientific knowledge about educational concerns, educational technology has been largely concerned with applied research and

the quest for solutions for immediate practical problems. Basic research into theoretical and philosophical domains has remained a field least explored. It appears that unconsciously a notion has gained ground among educational technology circles that there is such a procedure as "the" scientific method. But, "this is a notion that has to be discarded, simply because scientific knowledge is arrived at by a variety of procedures and methods."[6]

Many cognitive psychologists including Maslow are distressed by the disparaging attitudes that most researchers take toward theorizing, which seemingly stem in part from the doctrines of logical positivism and operationism. There is a surprising predilection for scientific accuracy over scientific adequacy.

> The most direct and veridical way to build a science is through the continuing accumulation of empirical facts--these facts to be arrived at through simple methodological manipulations and extensions. Exponents of this view entertain the hope that facts will automatically fall into place at some future time when there are enough of them, thus providing us with the neat empirical generalizations that will make all behavior perfectly understandable.[7]

The pursuit of truth in any form is not vitiated by theoretical constructs which, as a matter of fact, imparts generality which is heuristic for further experimentation.[8] The proliferation of isolated experiments, which are so many pieces of a giant jig-saw puzzle, can be rewardingly assembled in a comprehensive unification of facts through the synthetic and imaginative processes of

thought. One cannot minimize the high standards of objectivity and precision the tenets of operationism and logical positivism have contributed to theory formulation and clarification, but the emphasis on research rigor should not be allowed to stifle 'creative hunches' in the rich, multi-faceted internal processes; these are not only potentially rewarding, but also indispensable.

Toward a Philosophy of Education

"Many of the most persistent problems of education are ethical and moral and cannot be solved by the procedures that the scientist typically pursues."[9] The philosopher in education is concerned primarily about the nature of reality, sources of value, and what these may mean for education--aims, curricula, and methods. If the function of philosophy is to clarify, as most analytic philosophers tend to agree, then philosophical analysis, both logical and linguistic, of statements or propositions can and does involve itself in analyzing educational constructs like needs (of the students), real experience (inside and outside classroom), lifelike situations (in contextual instruction), etc. In such a process, metaphysical presuppositions like first principles and descriptions of ultimate reality, epistemological presuppositions like the origin, nature, method, and limits of knowledge, as well as axiological presuppositions like statements about value may either be explicitly stated, or implicitly

acknowledged.

The present study is a search for the justification of these presuppositions that underlie the instructional process, especially as contained in the IDI Model. The instructional/educational technologist may seek to maintain a foot in one philosophical camp, but reserve the right to borrow from another. Even such an eclectic stance should provide sufficient ground for a research to unsnarl the logical and linguistic tangles in pedagogical knowledge.

THE IDI MODEL LITERATURE

In the next chapter, the twenty-four decision processes of the IDI Model will be examined, point by point. The IDI program software included movie films, slide/tape presentations, and manuals for coordinators and participants, along with additional materials such as charts, schedules, and workbooks. However, the explanations and clarifications of the decision processes are culled primarily from the statements about the IDI Model's sequential activities that are given in the Instructional Development Institute: Coordinator's Manual. The IDI Coordinator's Manual was designed to provide the detailed explanations necessary for relatively unsophisticated persons to run the IDI. Detail-by-detail, it guides the coordinator through the management of the complex bits and pieces that make up the Institute, including the forementioned media,

simulations, and practicipant manuals. As the IDI Coordinator's Manual guided the coordinator, so did the participant's manuals guide them through the complex processes of instructional development. These participant manuals, listed below, were specifically designed to guide participants through the twenty-four decision processes and their attendant decision points:

1. "Prototype Specifications Exercise" by Lanny Sparks, pp. 114;
2. "Application of General Systems Theory to Instructional Development," by Thomas E. Harries, pp. 134;
3. "IAC Objective Rating," n.a., pp. 74;
4. "Selecting Instructional Strategies and Media," by M. David Merrill and R. Irwin Goodman, pp. 174;
5. "Evaluation for Instructional Development," by Frank Nelson, pp. 61;
6. "IDI Follow Up Procedures," by Floyd Urbach, Lanny Sparks and Tom Kepner, pp. 30.

All these separate manuals were copyrighted and published by the National special Media Institutes and were produced under a grant from the U.S. Office of Education, Bureau of Libraries and Educational Technology, Division of Educational Technology.

The IDI Coordinator's Manual is concerned with specific information and activities for the IDI participants and the twenty-four decision processes are stated in

the Prototype Exercise Workbook. Through a recourse to related writings by the responsible UCIDT instructional technologists during that period, and interviews with responsible IDI professionals, as comprehensive an explanation as possible is provided in this study. It is unfortunate that, despite the high degree of enthusiasm the IDI workshops generated, descriptive and explicatory formulations of IDI principles were not more exhaustively treated; professional journals,as a result, are not exactly bristling with theoretical studies that could probe the growth and impact of the IDI programs.

PRAGMATISM AND HUMANISM LITERATURE

This comparative analysis is conducted from two philosophical perspectives, i.e., pragmatism and humanism. Each of thes philosophical trends are represented by two proponents, namely, Charles Sanders Peirce and William James for pragmatism, and Abraham Harold Maslow and Jacques Maritain for humanism. To bring this study under reasonable bounds it was restricted to the examination primarily of one major work each of these four philosophers that were examined and found to contain the principal philosophical concepts and statements of the philosophers regarding either pragmatism or humanism.

The four 'scientific' works are the following:

1. Peirce, Charles Sanders. "Pragmatism," vol. 5 in <u>The Collected Papers of Charles Sanders Peirce</u>. 8 vols. Edited by Charles Hartshorne and Paul

Weiss. Cambridge, Mass.: Belknap Press of Harvard University Press, 1931-35.

2. James, William. Pragmatism and Four Essays from the Theory of Meaning. New York: Longmans, Green and Co., 1907; A Meridian Book, 1974.

3. Maslow, Abraham H. Toward a Psychology of Being. 2nd edition. New York: D. Van Nostrand, 1962; Insight Books, 1968.

4. Maritain, Jacques. Integral Humanism: Temporal and Spiritual Problems of a New Christendom. Translated by Joseph W. Evans. New York: Charles Scribner's Sons, 1968; University of Notre Dame Press, 1973.

These four books will be considered as the primary sources to form the philosophical perspectives for the analysis of the decision processes found in the IDI Model.

Since the philosophical positions of these four philosophers are not entirely set forth in the above mentioned books, relevant passages from other works by these authors are referred to for purposes of achieving greater clarification and precision.

Even though Chapter II dealt, to a limited extent, with pragmatism and humanism, it was necessary to set forth the specific characteristics and variants that distinguish the pragmatist philosophy of James and Peirce, and the humanist philosophy of Maslow and Maritain. Care was taken to include, in detail, all important features of these philosophies under definite classifications. Such a classification is arbitrary, since it is primarily intended as steps toward understanding the IDI Model. This should not be construed in any way as a major synthesis of these

philosophies since forcible collapsing of philosophical pronouncements, without any extensive and in-depth study, will be artificial and, from the point of this limited study, inadvisable.

The major classifications of these two philosophies are give below:

PRAGMATISM

1. Theory of Meaning
2. Theory of Truth
3. Theory of Inquiry

HUMANISM

1. Integral Humanism
2. Philosophy of Education
3. Theory of Personality
4. Theory of Values.

PRAGMATISM

Theory of Meaning

Pragmatism, as Peirce conceives it, is "not a Welt-anschauung but a method of reflexion having for its purpose to render ideas clear."[10] It belongs, then, to a methodology, to what Peirce calls 'methodeutic,' or speculative rhetoric.

The celebrated locus classicus of pragmatic maxim which Peirce supplied in his original article, "How to Make Our Ideas Clear," published in January 1878, ironically is the unclearest recommendation for how to make our ideas clear.[11] Peirce himself takes pains to explain his use

"five times over derivatives of concipere;"[12] it was an emphatic effort to show that he was "speaking of meaning in no other sense than that of intellectual purport."

Thus, it is a method for promoting linguistic and conceptual clarity and successful communication when solution for intellectual problems is being sought. Disputes and problems might apparently admit no solution, whereas the real culprit could be subtle confusions and elusive misuses of language. Thus the pragmatic method was regarded as part of a more comprehensive theory of the nature of signs, communication, and rational conduct which Peirce worked on for many years, but never completed.

According to Peirce, the third main division of logic, speculative rhetoric or methodeutic (the other two being speculative grammar and critical logic), deals with the "general conditions of the reference of Symbols and other Signs to the interpretants which they aim to determine."[13] In communication a sign called "representamen" by Peirce stands for an "object" (a thought, word, or object) to an interpreter, to whom it arouses a more developed sign, the "interpretant." The semiotic function of signs is for Peirce the triadic relation between representamen, object and interpretant. Peirce's pragmatism is thus a method of translating certain kinds of signs into clearer signs in order to surmount linguistic or conceptual confusion.

Peirce insists that the interpreter is not necessarily a human being, and lays great emphasis on the interpretant rather than on the interpreter. Thus, Peirce's speculative rhetoric is concerned in a large measure with the theory of meaning, because "meaning is the intended interpretant of a symbol."[14] He acknowledges that the word "meaning" has not been so far recognized as a technical term of logic, but stakes his right to do so because he has a "new conception to express."[15] Whether one speaks of a term, a proposition, or an argument, its meaning is the entire intended interpretant. As pragmatism is for Peirce a method for determining meaning, it is closely connected with rhetoric, which is called methodeutic.

Similarly for James, pragmatism is a method.[16] "The pragmatic method is primarily a method of settling metaphysical disputes that otherwise might be interminable."[17] For example, if theory X is proposed as a solution to a problem, with theory Z also claiming equal weight and consideration, the pragmatist will examine the practical consequences of both theories X and Z. If no difference could be found between the respective practical consequences of these two theories, then he will conclude theories X and Z are, to all intents and purposes, one and the same theory, and the quibbling between the two is purely verbal.

Peirce's pragmatism, which also was reflected in

James's Berkeley address in 1898, emerged from his first-hand experience and reflections on his own scientific work. "It is a good rule in physiology," he wrote, "when we are studying the meaning of an organ, to ask after its most peculiar and characteristic sort of performance, and to seek its office in that one of its functions which no other organ can possibly exert."[18]

A theory of meaning is a rule for determining the meaning of ideas. But there are different kinds of ideas. One might object that a theory of ideas properly should belong to epistemology, but Peirce insists that it is grounded on the logic of relations and thus has relevance to pragmatism.

There are universal ideas which are named variously as intellectual concepts or conceptions by Peirce, and reduced to three categories: pragmatism is a rule for determining their meaning. Drawing upon his studies of the universal categories of Aristotle, Kant, and Hegel, Peirce formulates a new list of categories, analogous to Kant's a priori form of the understanding, which he reduced from twelve to three: Quality, Relation, and Representation. In later writings, he sometimes called them Quantity, Reaction and Representation; finally, Firstness, Secondness, and Third-ness.

When the idea of a percept or sense-datum is consider-ed in itself without any relation to anything else, such as blueness without reference to a blue sky, this would merit

in Peircean terminology the idea of "Firstness."[19] Similarly, the idea of acting which involves the dyad of an agent and a patient (that which is being acted upon) is the idea of "Secondness," which cannot be reduced to the idea of Firstness. A third kind of idea is the idea of a sign relation, of a sign signifying to an interpreter that a certain property belongs to a certain kind of object which is called by Peirce the idea of "Thirdness."

The principle of pragmatism is formulated by Peirce in several ways, and one of the best known is as follows:

> In order to ascertain the meaning of an intellectual conception one should consider what practical consequences might conceivably result by necessity from the truth of that conception; and the sum of these consequences will constitute the entire meaning of that conception.[20]

To adduce an example, Peirce introduces the idea of hardness. To say that an object Q is hard to someone who does not understand what hardness means, is to explain that if someone exerted pressure on it, it would not give in as butter does; if the operation of scratching the object Q is performed, Q will not be scratched by most substances. One thus achieves clarity when a collection of conditional statements of this kind can be supplied. And the sum total of 'practical consequences' which necessarily follow, if it is true to say that an object is hard, gives the entire meaning of that concept. If that person for whom the explanation is being supplied does not believe this, all that he

has to do is to exclude all such 'practical consequences' from the meaning of the term, and then it would be impossible for him to distinguish between the meanings of 'hard' and 'soft.' Thus pragmatism maintained that one meaning of any proposition whatsoever "is reducible to the future consequences in experience to which that proposition points, consequences which those who accept the proposition ipso facto anticipate as experiences subsequently to have."[21]

Peirce holds that the meaning of an intellectual concept can be explained in terms of necessary relations between the ideas of secondness and the ideas of firstness, i.e., between the ideas of action (agent + patient) and ideas of perception. When Peirce talks about 'consequences,' he is not simply referring to the consequent (consequens), but to the relation (consequentia), between a consequent and an antecedent. From this, it becomes evident that the meaning of an intellectual concept has a relation to conduct; the conditional propositions in which the meaning is explained refer to conduct. It is also obvious that to understand the meaning of an intellectual concept, one need not perform certain actions, which are mentioned in the explanation of its meaning. To rephrase it differently, "the meaning of an intellectual concept is explicable in terms of conditional propositions; but, for the meaning to be understood, it is not necessary that the conditions should be actually fulfilled. It is only

necessary that they should be conceived."[22]

"There is no doubt, then," asserts Peirce, "that pragmatism opens a very easy road to the solution of an immense variety of questions. But it does not at all follow from that, that it is true."[23] Peirce, who took pragmatism as his guide in most of his thought, found it over years more and more convincing. "If it is only true, it is certainly a wonderfully efficient instrument. It is not to philosophy only that it is applicable. I have found it of signal service in every branch of service that I have studied."[24]

If Peirce thought of pragmatic method as applying primarily to the use of language and as a way of clarification and analysis of assertions and concepts, William James converted Peirce's recommendation to study the logical consequences of concepts, under certain prescribed conditions, into an "evaluation of the moral, psychological and social effects of ideas."[25] For James, "it is astonishing to see how many philosophical disputes collapse into insignificance the moment you subject them to this simple test of tracing a concrete consequence."[26]

James wanted to construe pragmatic method as an "attitude of orientation... <u>attitude of looking away from first things, principles, 'categories,' supposed necessities; and of looking towards last things, fruits, consequences, facts</u>."[27] James made pragmatism to lie in the midst of our theories, "like a corridor in a hotel" with

innumerable chambers opening out of it. James wanted all who reside in the hotel to own the corridor and pass through it if they wanted a practicable way of getting into or out of their respective rooms. But as Thayer notes, it was not very clear whether the corridor really led to the chambers, or whether most of the odd inhabitants of the chambers ever used the corridor at all.[28]

It was not Peirce's intention that all thought issues in action, nor did he say that the "interpretation" of thought lies in action. Thought, said Peirce, may ultimately apply to conceived action.[29]

> My point is that the meaning of a concept ... lies in the manner in which it could conceivably modify purposive action and in this alone. James, on the contrary, whose natural turn of mind is away from generals ... in defining pragmatism, speaks of it as referring ideas to experiences, meaning evidently the sensational side of experience, while I regard concepts as affairs of habit or disposition, and of how we should react.[30]

Peirce repeatedly emphasized that pragmatism was not a philosophy of action; but James saw it differently. James, who widely popularized pragmatism, saw that his own radical empiricism substantially coincided with the views of Peirce. When the original version of Peirce's pragmatism was elastically stretched to suit different pronounciations of pragmatism Peirce was forced to "kiss his child good-by" and announced the birth of "the new word 'pragmaticism'" which, he said, was ugly enough to be safe from kidnappers.[31]

Theory of Truth

If James differed from Peirce in his conception of pragmatism with his own emphasis on particular practical effects, the difference is more evident when pragmatism as a theory of meaning becomes for James also a theory of truth. James explicitly states that "the pivotal part of my book named Pragmatism is its account of the relation called 'truth' which may obtain between our idea (opinion, belief, statement, or what not) and its object."[32]

TRUTH - PROPERTY OF BELIEFS

Truth, for James, is a property of certain of our beliefs, not of things. "Objective realities are not true ... they are taken as simply being, while the ideas are true of them."[33] Logical truth or falsity is predicated of propositions, not of things or acts. The existence of Julius Caesar at a certain period of time cannot be properly called true; but the statement that he existed at a specific time is true, and the statement that he did not exist is false. Thus the statement that Julius Caesar existed is true in virtue of a relation of correspondence with reality or fact, not in virtue of the meanings of the symbols in making that statement.

To say that a true belief (he also speaks of ideas) is one which corresponds with reality raises more questions than solve problems, according to James. At the time of the writing of Pragmatism, there was a "dictionary" definition of truth as 'agreement of ideas with reality.'[34]

While James did not deny this, the more important point for him was to understand what 'agreement' and 'reality' fully mean. The purpose of his pragmatic theory of truth was not to provide anew another general definition of truth as other philosophers had done in the past, but to investigate and fully explain the particular characteristics of our ideas (or beliefs or assertions) and of the circumstances in which they occur that endows them with truth.

"Truth is essentially a relation between two things," James wrote, "an idea, on the one hand, and a reality outside of the idea, on the other."[35] Here, one needs to understand what relation or correspondence mean and how James employs the pragmatist interpretation of an idea as a rule for action. According to James, pragmatism asks the question: "What concrete difference will its being made true make in anyone's actual life? ... What experiences will be different from those which would obtain if the belief were false?"[36]

His conception of the teleological nature of thought is central to his theory. It is in the prospective reference and the function of ideas that truth becomes "made," and the essential thing is "the process of being guided." If the process or journey from the idea of a subjective experience (terminus a quo) leads us to objective reality (terminus ad quem), then it is true. In other words, the truth of an idea is the process of its verification or

validation. James wrote:

> Truth happens to an idea. It becomes true, is made true by events. Its verity is in fact an event, a process; the process namely of its verifying itself, its veri-fication. Its validity is the process of its valid-ation.[37]

If one is lost in the woods and then comes upon a footpath which he thinks will probably lead him to civilization, that idea is then a plan of action. "And if my following out this plan verifies or validates the idea, this process of verification constitutes the truth of the idea: it is the 'correspondence' to which the correspondence theory of truth really refers."[38]

POTENTIAL TRUTHS

Taken by themselves, the above mentioned sentences might suggest that James was limiting true ideas only to those that were in fact verified, but he continues this statement and speaks about a general store of extra truths. If truths are made true by verification or validating, it logically follows that unverified truths are potentially true, truths in posse. Thus, James militates against philosophical rationalists or intellectualists who hold static, timeless truths which are prior to any verification. "Intellectualist truth is only pragmatist truth in posse."[39] Pragmatist truth contains the whole of intellectualist truth and a hundred other things in addition, he said.

This general storage of extra truths may not be important at all times; being practically irrelevant, they may remain latent. However, they could be jogged into action when an object may some day become temporarily important and then it "passes from cold storage to do work in the world and our belief in it grows active."[40] In this sense, one can say "that 'it is useful because it is true' or that 'it is true because it is useful.' Both these phrases mean exactly the same thing, namely, that here is an idea that gets fulfilled and can be verified."[41]

TRUTH AND VERIFICATION

An idea can get fulfilled as well as verified. "True is the name for whatever idea starts the verification process, useful is the name for its completed function in experience."[42] Truths are counted verifiable only because of their similarity to ideas which are actually verified, nor is anyone expected or obliged to do the verification work by oneself, "any more than a wealthy man need be always handling money, or a strong man always lifting weights."[43]

To refer to the pragmatic method of discovering the meaning and truth of ideas as that of giving us their "cash value" is consonant with James's popular literary style, but it also indicates that James was more interested in the moral and practical meanings of ideas than in the construction of a general theory of meaning; Peirce tended to be

just the opposite. "In short, Peirce was concerned to explicate the idea of meaning whereas James was concerned to explicate the meanings of ideas."[44]

DIFFERENT VIEWS ON TRUTH BY JAMES AND PEIRCE

A pragmatic theory of truth is generally accepted as consisting of a reference to a criterion which assesses the claim to truth of a thesis in terms of success or its conduciveness to the realization of some sort of usefulness. But this view is markedly a Jamesian form and the pragmatism of Peirce is very different from this. For Peirce, the criterion for assessing the truth of a factual thesis was not at all its applicative success, but rather its stability or staying-power: the temporal constancy with which a truth endured within a scientific community. The scientific method of inquiry is the established methodology of investigation within a scientific community of rational inquirers. Obviously, it is of paramount importance to accept the continuity of the scientific method as one historically uniform method; if it differed over time, the significance of the time-series aspect of how these 'truths' fare on different occasions would be conclusively undone. It was Peirce's thesis that if a uniform methodology is applied over time in a way that is successively more refined and sophisticated with improved data-base, then it is certainly reasonable to expect a scientific thesis of deserving recognition as true if it manages to secure

ongoing acceptance within the scientific community. In this connection there seems to be a marked similarity between the Peircean theory of truth as 'retention-stability' with the Darwinian concept of 'survival of the fittest.' The survival value of the Peircean theory of truth will be contained in the survival of tests or continued success in frustrating the attempts at experimental or observational falsification.

The Jamesian pronouncements on truth stirred up a great controversy even before the publication of Pragmatism and has raged in many of the journals since 1903. "Most of the best known philosophers of the time took positions and advanced their views on the subject."[45] The discussions and controversy it raised continued for some years and James published his final restatement of views in 1909, in the Meaning of Truth, which he subtitled "A Sequel to 'Pragmatism'."

It is worthwhile remembering that James's "theory of truth" was never completely formulated, a fact which the author himself acknowledged. But even from such a 'sketchy' theory which underwent changes in style and outlook one can detect special emphasis that may not be altogether incompatible with some of his statements.

Theory of Inquiry

The theme of human inquiry held a profound interest for Peirce and he devoted some of his best thought to

analyzing this problem in detail. In 1898, he declared:

> From the moment when I could think at all, until now, about forty years, I have been diligently and incessantly occupied the study of methods of inquiry, both those which have been and are pursued and those which ought to be pursued.[46]

INQUIRY: PHYSICO-PSYCHOLOGICAL ORIGINS

As a mathematician, logician, and scientist in disciplines like astronomy, chemistry, geodesy and optics, Peirce brought into the study of human inquiry a wealth of first-hand experience in observational procedures, analytic power and logical rigor. Probing the biological and social nature of man, Peirce sought to show that "thinking, as cerebration, is no doubt subject to the general laws of nervous action."[47] When a nerve is stimulated, Peirce said, it displays an automatic tendency to react in such a way as to remove that stimulus or irritation. All vital processes become easier on repetition, and as every type of nervous irritation eventually produces the action that removes such stimulus, "a strong habit of responding to the given irritation in this particular way must quickly be established."[48] Habits are thus formed and one of the most important habits is that "by virtue of which certain classes of stimuli throw us at first, at least, into a purely cerebral activity."[49]

Habits can be understood in a wider sense where it

would be a synonym for natural law which applies to the interpretation of inorganic as well as organic phenomena. In a narrower sense, however, habit could be said to be any acquired form of behavior, produced by repeated responses of an organism to stimuli of a specific kind. Thus, "habits are regarded not as passive modes of behavior, but as positive determinants of action."[50]

BELIEF - RULES FOR ACTION

If man "is a boundle of habits,"[51] he also has the distinctive characteristic of becoming conscious of habits; to be identical with consciousness is for Peirce "a belief." A genuine belief, or opinion, "is something on which a man is prepared to act, and is, therefore, in a general sense, a habit."[52] Belief is thus construed, not as an abstract or intellectual conviction, but as a dynamic force which manifests itself in behavior.

Every habit has the possibility of being blocked with the appearance of a new experience which was not previously dealt with in the environment and a new habit must be formed to cope with this new unfamiliar stimulus. While the original habit is a belief, doubt is an irritating condition usually originating externally from surprise;[53] doubt, then, is the privation of habit,[54] a state of uneasiness and hesitancy. It is "an uneasy and dissatisfied state from which we struggle to free ourselves."[55] Peirce

calls this struggle inquiry. The resolution of doubt, the removal of the obstacle is obtained either by re-establishing our former belief on a firmer basis or by substituting for it a better-grounded belief. Thus, the aim of inquiry is to re-establish and "fix beliefs," i.e., to render them secure against future surprises and disappointments.[56]

This new belief, which ends in the resolution of a doubt not previously accounted for, also contains a reference to action. Belief is not equated with action, nor does it produce action, but rather it is a rule of action and the establishment of habit. Thought in action [i.e. inquiry] has for its only possible motive the attainment of thought at rest [i.e. belief].[57] But, since belief is a rule for action, "the application of which involves further doubt and further thought, at the same time that it is a stoppingplace, it is also a new starting-place for thought."[58] Belief thus has three properties, says Peirce, "First, it is something that we are aware of; second, it appeases the irritation of doubt; and, third, it involves the establishment in our nature of a rule of action, or, say for short, a <u>habit</u>."[59]

Peirce's theory of inquiry clearly lays a greater emphasis on its constituent logical structures and their problems and it keeps more steadily in view the belief or opinion which stands as the outcome. Characteristic to the pragmatic outlook he espouses, Peirce views inquiry in its existential import as a process carried out by a 'flesh and

blood experimenter,' notwithstanding the logician Peirce's undoubted concern to analyze the logic of inquiry; like James, he is here concerned with what 'actually happens' in human consciousness when believing, doubting and the attempt to overcome doubt are involved. "The empirical orientation of both thinkers stands out clearly; neither was prepared simply to set aside the facts revealed in our direct experience of doubting and believing in order to proceed to a theory of how we should determine belief."[60]

REJECTION OF CARTESIAN DOUBT

Descartes initiated his philosophical inquiry by doubting everything until an indubitable and propositionless point of departure could be found. For Descartes, the proper starting-point for inquiry is a state of complete absence of belief, achieved through the activity of doubting systematically all of one's beliefs and subsequently accepting just those which are certified by rational inquiry. Peirce rejects the Cartesian doubt, since one cannot doubt simply at will.[61] Real or genuine doubt, asserts Peirce, arises when some experience, either internal or external, clashes or appears to clash with one of our existent beliefs.

> Descartes convinced himself that the safest way was to "begin" by doubting everything, and accordingly he tells us he straightaway did so, except only his je pense, which he borrowed from St. Augustine. Well I guess not; for genuine doubt does not talk of beginning with doubting.[62]

If a follower of Descartes were to counter this argument of Peirce by insisting that it is a 'methodic' doubt, Peirce argues that even in this case, it is not a genuine doubt; either one must have a reason for doubting or one does not have: if the former, then it is a genuine doubt, and if the latter, then it is a fictitious doubt.

Thus, doubt is a stimulus to inquiry, and in this sense it has a positive value, according to Peirce.
Peirce rejects the intellectualist conception of inquiry which accepted unhesitatingly first principles, known as 'self-evident truths,' the Ding-an-Sich (Thing-in-Itself) of Kant, the "Unknowable" of Spencer and Hamilton, the "Monads" of Leibniz and all other "inexplicable ultimates." He adduces other facts which are fatal to the notion of absolute first principles. There never has been "any general agreement either as to their number or as to their particular content."[63] Similarly, the primacy of certain propositions as advocated by some philosophers is inconceivable, as

> J.S. Mill puts it, 'the history of science teems with inconceivabilities which have been conquered.' What is required, therefore, is that 'inconceivable' should mean not merely unrealizable in imagination today, but realizable after indefinite training and education.[64]

Do not block the way of inquiry, said Peirce, because there is no escape from the need of a critical examination of 'first principles.'[65] This imperative at the same time serves to express the open-ended character of Peirce's

thought and the general pragmatic outlook where thought is always in transit and also has a tentativeness which disturbed its critics. "For Peirce, no less than for James and Dewey, tentativeness belongs essentially to all inquiry, and cannot, in principle, be overcome."[66] Of course, resolute action requires firm belief and the demand for action calls for the curtailing of this tentativeness of thought or inquiry; this point emphasizes the pragmatist position about the importance as well as the precariousness of the 'practical.' "Action does not require us to convert a tentative knowledge into an absolute certainty, but it does require us to 'make up our minds' as to what is relevant and what we must believe if we are to act at all."[67]

HUMANISM

Maritain's Integral Humanism

Integral Humanism, Maritain's "blueprint for a better world," is not conceived as a utopia, which is only a ens rationis or a construction of the mind put forward in place of reality, but rather as a concrete historical ideal,[68] that is capable of being realized in a given historical climate and as a result of corresponding to a relative maximum of social and political perfection. This 'concrete historical ideal' is based upon the realization of a new christian order.

CHRISTENDOM VS. CHRISTIANITY

A new christian order does not mean in any way a return to the Middle Ages, scholasticism, and the temporal supremacy of the popes. "Definitely, absolutely and without qualification it does not; the very word 'new' automatically precludes any such thing."[69] A key to the understanding of Maritain in this respect is the distinction between christianity and christendom which is fundamental to Maritain's thought. Most people may regard this distinction as two sides of the same coin, but to Maritain this differentiation is crucial. "Christianity" is a religion, based upon eternal truths revealed to man by God and as such immutable, though it may grow through the cumulative intellectual speculations of religious persons; it is in the world, but above time, and capable of reaching out to people of every race, nation and culture. "Christendom," on the other hand, designates "a certain temporal common regime whose structures bear, in highly varying degrees, the imprint of the christian conception of life."[70] It is a particular form of secular culture in which christianity lives and which it may inspire or infuse with its own vitality. There is only one 'christianity'--one Church--but there could be diverse 'christendoms,' and diverse christian civilizations. It would have been possible to have had a christendom of the ancient Greek city-states if christianity had been revealed centuries earlier than the date of its present origin.

The word 'christendom' is still used today to denote the Western European world with its Greco-Christian intellectual tradition of many past centuries; but this tradition has become so threadbare that Maritain believes it could be termed as 'christendom without christianity.' The tragedy of Europe in the 1930s caught up in internecine wars was clear in the mind of Maritain when he wrote his Integral Humanism; this was only a reflection of the lamentable decay in political philosophy during the classical bourgeois, and revolutionary moments of history.

> After all the dissociations and dualisms in the age of anthropocentric humanism--the separation and opposition of nature and grace, of faith and reason, of love and knowledge, as also of love in the sense of affective life--we are now witnessing a dispersion, a final decomposition.[71]

Militating against not only absolute atheism which he called "an act of faith in reverse gear"[72] and atheistic communism but also against various nonatheist and non-Marxist social humanisms, integral humanism called for a more radical and "substantial transformation."

INTEGRAL HUMANISM

Only a new humanism can redeem the humanism of the modern world. "An integral humanism alone can rescue the truths made captive of anthropocentric humanism, for only an integral humanism can synthesize these truths in an 'organic and vital manner.'"[73] Anthropocentric humanism

believes that man himself is the center of man, and therefore of all things. It implies a naturalistic conception of man and of freedom.[74] Theocentric humanism, on the other hand, recognizes God as the center of man as evidenced in the christian conception of the sinner and the redeemed, and of grace and freedom.[75] Maritain states that the dialectic of anthropocentric humanism is the tragedy of humanism and thus it merits the name of inhuman humanism. The reinstatement of God, in a rationalist and, later, in a positivist era, as the center of the human being may smack of mediaevalistic pietism, but it is perfectly tenable, according to Maritain, if one apprehends the sharp distinction between the individual and the person.

INDIVIDUAL VS. PERSON

Following the Aristotelian distinction between matter and form, St. Thomas maintained that matter is the principle of individuation, i.e., a thing exists as an individual within a given species by virtue of the matter or material constitution. Each particular human being is an individual within the species 'man,' but not man, not even all men taken together, can fully exhaust the potentialities of that species called 'man.' The individual is wholly dependent on the species not only for its nature, but for the very fact that it exists at all. When Aristotle insisted that the whole is more than the sum of its parts, he was simply saying that the species is more important than any

of the individuals comprising it. Maritain took this idea to its rigorous limits. "In each of us, individuality, being that which excludes from one's self all that other men are, could be described as the narrowness of the ego, forever threatened and forever eager to grasp itself."[76] Each of us is subject to the determinism of the physical world; science and technology can minister to the material needs of the individual. Subsequently, the individual is subjected to the community that is comprised of similar individuals; in the political sphere, it means the surrender of temporal goods for the welfare of the community.[77]

If every man is an individual by virtue of the possession of a body, composed of flesh and blood (i.e. the principle of individuation), he also has a spiritual super-existence through knowledge and love, so that he, in a way, is a microcosm in himself in which the macrocosms in its entirety can be encompassed through knowledge. By love, he can give himself to others completely, who are to him, as it were, other selves. Spirit is the root of personality and thus involves the notion of totality and independence. "To say that man is a person is to say that in the depth of his being, he is more whole than a part and more independent than servile.[78]

> It is the metaphysical mystery that religious thought designates when it says that the person is the image of God. The value of the person, his dignity, his rights, belongs to the order of things naturally sacred which bear the

> imprint of the Father of Being, and which have in him the end of their movement.[79]

Human intelligence and will set man apart from the animal kingdom. Despite his acknowledgment and appreciation of the scientific progress made in psychological theories, Maritain opposes psychologies that would wholly materialize man and reduce him to the level of brutes. The entire person is relative to the absolute, in which alone can it find its fulfillment. As a member of the species, one individual exists for the sake of that species; but as person, it does not exist for the sake of anything else.

INTEGRATION OF INDIVIDUAL IN PERSON

This analysis of relationship between individual and person appears to have raised more doubts than solved problems. One might rightly ask: how could one subject to the rigorous laws of the physical universe simultaneously enjoy a freedom that transcends these laws? Is not Maritain guilty of the same sin of dualism which he accused his "dear enemy, René Descartes" of? There is no attempt to sit astride both sides of a shaky fence, avers Maritain.

> However evident it may seem, in order to avoid misunderstandings and nonsense, we must emphasize that they [the individual and the person] are not two separate things. There is not in me one reality, called my individual, and another reality, called my person. One and the same reality is, in a certain sense, an individual, and in another sense, a person. Our whole being is an individual by reason of that in us which derives from matter, and person by reason of that in us which derives from the spirit.[80]

INTERRELATION OF 'DISTINCTIVE POWERS'

Maritain, a committed Thomist, seriously follows Aquinas when he speaks about the interrelation and interworking among the powers of man that anything happening to the body happens to man and anything affecting the soul also affects the body. It is the human being that makes free choices but this life of freedom does not operate independently of other powers in him or her, such as sense powers, intellect and imagination. Distinct powers imply distinct operations, as Aristotle stated, and there are in human beings distinct operations: intellectual, locomotive, volitional, sensory, and digestive. Distinctness, not separation--that is the key concept to be remembered. All these powers are working "synergistically" with an immense dynamism emanating from the very center of the soul. There are several diverse powers each of which tend toward an external achievement; but they all refer back to a single root--human being--where they find the basic center and source of life. None of these powers progress in a laissez-faire manner independent of others. This 'integral unity' of the human being with its powers of desire, love, emotion, intellect, and imagination is the center of Maritain's philosophy of education.

Maritain's Philosophy of Education

Normally, a philosophy of education will have to be pieced together from the writings of a philosopher from various sources and themes such as theory of knowledge, theory of meaning, and theory of person and society. But Jacques Maritain has explicitly worked his philosophy of education, notably in the Dwight H. Terry Lectures, given at Yale University, in 1943,[81] and in two later articles. For Maritain, the philosophy of education depends upon the philosophy of man, and education is, above all, a process of liberation.[82] Though a philosophy of education is generally concerned with the role of school in the life of the mind, education is understood in a deeper sense by Maritain, both in and out of school environments, as a synergistic operation of the whole human substance with interlocking human powers and a tendential dynamism working upwards and downwards along the depths of the soul.

"Education directed toward wisdom," Maritain said, "centered on the humanities, aiming to develop in people the capacity to think correctly and to enjoy truth and beauty, is education for freedom, or liberal education."[83] Liberal education, once the prerogative of a privileged few, must be natural, right, and eternal for all and its prime goal is the conquest of internal and spiritual freedom to be achieved by the individual person, "his liberation through knowledge and wisdom, goodwill and love."[84]

UNCONSCIOUS IRRATIONAL VS. PRECONSCIOUS SPIRIT

Maritain examines what a man does while he is performing such characteristic acts as seeing and reasoning. There are distinctive powers or 'faculties' employed here--interlocked entities welling from what he calls "a deep and nonconscious world of activity." He presupposes the existence of a vital "unconscious or preconscious" in the inner depths of personality to account for the internalization of educational influences.[85] This dual reality under one heading, the "unconscious or preconscious," is a novel and basic conception to Maritain's educational theory which is a cross between Aquinas and Freud.

1. The Unconscious of the irrational in man, as was labelled by Maritain, is the Freudian field of latent images, affective impulses and sensual drives. Freud excelled in explaining this field, but missed altogether,
2. The Preconscious of the spirit in man, the field of the root life of those spiritual powers, the intellect and the will, the fathomless abyss of personal freedom and the personal thirst and striving for knowing and seeing, grasping and expressing.[86]

These two depths of the irrational subconscious and the preconscious spiritual are vitally interconnected in the individual person and can easily get in the way of each other. Our universal human vocation, to be achieved in and

out of school, is to "free and purify the spiritual unconscious from the irrational one, and to find our sources of life and liberty and peace in this purified preconsciousness of the spirit."[87] It is with the preconscious or the subconscious of the spirit that education is mainly concerned.

EDUCATION: A PROCESS OF LIBERATION

This process is not a matter of techniques, nor of the training of the subconscious, but rather of liberation. "With regard to the development of the human mind, neither the richest material facilities nor the richest equipment in methods, information, and erudition are the main point."[88] The cult of technical means or technology in instruction-producing science by their own virtue must give way to respect for the spirit and dawning intellect in man. "Teaching is an art; the teacher is an artist," said Maritain, and there must be an intellectual sympathy and intuition on the part of the teacher, concern for the questions and difficulties of the learners, and a personal attention to the inner blossoming of the rational nature. In the pupil, "a germ of insight starts within a preconscious intellectual cloud, arising from experience, imagination,... but it is from the outset a tending toward an object to be grasped."[89] To the degree this tendency is set free, this intuitive power is liberated and strengthened.

Regarding the aim of education, Aristotle stated that "Man is to be." Dewey said that "Man partly is and wholly hopes to be." For Augustine, the end is that man fully be. Aquinas took it a step further: everything desires to be in its own type of being (esse in suo modo).[90] For Maritain, man is to be and he is to be thoroughly and fully man. The principal task of man is to guide the evolving dynamism through which man forms himself as man. It is on this teleological premise that human rights are fully and firmly established. Since school and college education pertains only to the beginnings and the completed preparation of the upbringing of man in his lifelong pursuit to be fully human, the dominating influence of formal education must be that of truth and the assent of an "open mind."[91]

With these basic ideas on the philosophy of education, some of the related concerns, as expressed by Maritain, may be briefly listed as follows:

1. His important insistence on the child as person revolves around two centers: the child who is to know and love, and the object to be known. The object must be accepted and respected, but more deserving of respect is the person in the child, his freedom and spontaneity along with any spark of creativity he shows.

2. Maritain emphasizes the inalienable right of all human beings for a liberal education, because

training of the whole person is the objective of eudcation. Subsequently, the exclusive concern for the training of an individual in a specialization that disregards the education of the person is a misfortune of modern educational theory. "The education of man is a human awakening."

3. Teachers are like artists, tutors of the spirit, sculptors and painters who work with living, human material. He has a triple responsibility: to the student for providing him with knowledge and skill so that the pupil may grow into a fully developed human person, to the community for making the student a worthy member of the community, and to God for directing him to his supernatural end.

4. Education must tend to unify, not to spread out. Manual labor is as important as intellectual exercises; the cleavage between homo faber and homo sapiens should be done away with. Education must start with experience, but an imbalanced reliance on empirical methods, despite their high values and importance, can lead to an exclusion of metaphysical principles. "Education must inspire eagerness both for experience and for reason, teach reason to base itself on facts and experience to realize itself in rational knowledge, grounded on principles, looking at the raisons d'être, causes and ends, and grasping realities in terms of how and why."[92]

5. Progressivism in education is to be applauded for stressing the inner dynamism of nature itself and of the child's mind, and for giving due freedom to the child in expressing itself in creative ways. Educational techniques employed are continually broadening and enriching education, provided these means are not construed as gods and goals in themselves.

4. In a moving passage, Maritain said in 1943:

> I like and respect contemporary youth and I contemplate them with a strange feeling of anguish. They know a great deal about matter, natural facts, and human facts, but almost nothing about the soul. All in all, their moral standard is not lower, though more openly lax, than that of the preceding generation. They have a sort of confident candor which rends the heart ... Their naked nature is not a mere nature, but nature which for centuries had been strengthened by reason and faith and accustomed to virtues, and which is now stripped of every prop ... Anxiety and thirst arise in a number of them, and this very fact is a reason for hope.[93]

Maslow's Theory of Personality

Gordon Allport, Carl Rogers, Henry Murray, and Abraham Maslow are some of the stalwarts in the vanguard of "third force" psychology. Despite a great wealth of psychological studies from Maslow, it is difficult to find one authoritative definition of personality in his writings, but the following may be considered at least representative of his approach.

> Our preliminary definition of personality syndrome is that it is a structured, organized complex of apparently diverse specificities

> (behaviors, thoughts, impulse for action, perceptions, etc.) which ... have a common unity that may be expressed variously as a similar dynamic meaning, expression, "flavor," function, or purpose.[94]

The specificities that Maslow employs are presumably the kinds of variables explicative of his use of the term personality--general and subject to diverse interpretations. The list he provides is not exhaustive, but rather exemplary; he is apparently content to consider any of the many possible terms that can be conjured up by anyone. Despite this lack of complete and precise data specification that sometimes results in inconsistency in application, it is possible to proceed further with the actual concepts and propositions of his personality theory.

BASIC NEEDS OF HUMAN NATURE

For Maslow, the basic concept is <u>need</u> which refers to organismic requirements, dynamic forces expressing human goals that organize and direct behavior toward need gratifications. They are <u>instinctoid</u> in the sense that they are universal to man both in species wide and species specific capacity. The needs, however, are not full-fledged instincts, though they are rooted in the organic nature of man, because each need can be expressed and satisfied in many different ways. "Maslow spoke of them as instinctoid because he believed that they are the remnants in the human

of the animal instincts appearing lower on the phylogenetic scale."[95]

Maslow provides a classification of these basic needs as physiological needs, safety needs, belonging and love needs, and the need for self-actualization.[96] These needs were divided into 'lower' and 'higher' needs, the former reflecting little more than the biological requirements of the organism for survival, and the latter mirroring biological potentialities that could enrich life in psychological and social ways. Later, Maslow considered higher needs to represent growth motivation and the lower needs to represent deprivation motivation.[97]

HIERARCHY OF NEEDS

Maslow recognizes a hierarchy of needs, with the more prepotent or more vital needs, like safety, towering over love, and the physiological need (for food) over both. Prepotent needs, like all basic needs, account for similarities across different people, on one level; on another level, they lead to differentiations. The various strategies and specific conscious desires that partly define the motives represented in the basic needs have to be distinguished from the fundamental goals or gratifications that remain constant through all this flux. They are simply steps along the time-path to general self-actualization, under which all basic needs can be subsumed.[98] Though he makes an attempt to constitute a relative unity behind the

superficial differences in specific desires across cultures, Maslow is not ready to claim that such a classification is the ultimate for all cultures. He would assert, however, that it is "more ultimate, more universal, more basic than the superficial conscious desires, and makes a closer approach to common human characteristics."[99]

Within Maslow's scheme, the physiological needs are the most basic: needs for food, water, sleep, warmth, exercise, and procreation which all serve the homeostatic balance of the body and keep it alive. However, these needs and their respective consummatory behavior are not isolable since they may serve as channels for other needs as well; e.g., the person who thinks he is hungry may actually be asking for comfort rather than proteins. There is a directional tension more than the specifics of its expression. Need canalization, over time, leads to the establishment of stable preferences for certain kinds of objects for satisfying needs. This involves learning through which objects are discriminated as suitable or unsuitable for need gratification.

NEED GRATIFICATION

Once gratification is achieved, need intensity subsides. The drive or need presses toward its own elimination.[100] So, while not triggered by external events,

needs do wax and wane, depending upon levels of gratification; but in Maslow's scheme, the susceptibility of basic needs to arousal by external environment is minimized, because the ubiquitousness of needs stems from the body as an organic system.

The satisfaction of the basic needs is achieved through a cessation of tension, a homeostasis, a quiescence, a state of rest. But homeostasis, for Maslow, is not a zero rest, "but coming to an optimum level,"[101] which sometimes may mean reducing tension, sometimes increasing it. Running through it all is a constant direction or directional tendency that must be invoked to make any sense of development through the life time.

FREUDIAN AND MASLOWIAN APPROACHES

Freudian approach to the human homeostatic tendency implied the maintenance of organismic tension at a steady and lower level; through repetitive behaviors, people tend to reduce tension. The persistence of early learning behaviors vindicates, according to Freud, this effort toward tension reduction. But Maslow, along with Allport and Murray, find such a conceptualization of man's functioning inadequate in its explanation of the future-oriented behavior which seems to precipitate, rather than reduce, high levels of tension. As human beings age and grow in experience, they become less predictable than before, less creatures of habit and more vigorous in the process of

creating themselves. The major thrust of Maslow's position was to understand the human gropings toward an individuality that expresses their own particular potentialities. Maslow wrote:

> We must know what men are like at their best; not only what they <u>are</u>, but also what they can become... My own belief is that such a health psychology will inevitably transform our deepest conceptions of human nature.[102]

GROWTH MOTIVATION AND COGNITION

The important consequences emanating from his distinction between deficiency-motivation and growth-motivation provide a better vantage for the examination of cognitive activities in human beings. In deficiency-motivation, an individual is more likely to be concerned with need reduction, in satisfying a felt need and the activity itself is homeostatic; in growth-motivation, however, this urge for need reduction pales before self-actualization which aims at fuller humanness, greater selflessness and more intense reality-centering. Cognitive activities like scientific work and philosophizing become increasingly possible and delightful. A scientist, after having mastered his anxieties, can be seen "as coping positively with problems in order to be victorious over them."[103] Maslow sees him as having achieved an integration of "cautious knowing" and "courageous knowing." This personal integration is especially important because he sees the scientific method being less influential in shaping the approach to

inquiry than are the personality values and the personality itself of the scientist.

It may now be opportune to consider Maslow's Theory of Values.

Maslow's Theory of Values

Educators are not only in the business of transmitting knowledge and developing trained intelligence; they are also in the business of recommending to the young a value system and to look at life as an 'environment of preferences.' People do desire and prefer things, but the truly axiological question is whether they ought to desire what they in fact do desire. The dichotomy of "Ought" and "Is" brings philosophy and education as two versions of the same activity. They both ask, "What can we make of man?" While philosophy asks it in macrocosm (Man), education asks in microcosm (man). So, "philosophy is indeed 'the generalized theory of education.' And conversely, education may be termed 'the specialized practice of philosophy'."[104]

INNER NATURE: BASIS OF ETHICS

Maslow, as a matter of fact, cuts himself off from the restrictive ground-rules which have distinguished the classical or traditional moral philosophy; the normative ethics governing the age-old distinction between "what is" and "what ought to be" are pseudo-issues to him. He proceeds, on the other hand, to deal with a "descriptive and

neutral" ethical activity. "Maslow has, with sweeping strokes, composed a theory of value characterized by its comprehensiveness and its almost singular disregard for certain logical and linguistic distinctions which were considered revolutionary in their impact on 20th century ethical thought."[105]

Maslow advocates a biologically based inner nature of man which, when encouraged, allows him to grow healthy, fruitful and happy.[106] This inner nature, in part species wide and in part specific to self, is intrinsic and given, and in a limited sense unchangeable and unchanging; it also can be discovered scientifically. Though it can be overcome by cultural pressure, wrong attitudes, habit etc., it is primarily not evil and persists forever "underground" pressing for actualization. He lists nine assumptions about inner nature and voices confidence

> ... that if these assumptions are proven true, they promise a scientific ethics, a natural value system, a court of ultimate appeal for the determination of good and bad, of right and wrong.[107]

Maslow seems to see in his value theory the culmination of a rather lengthy series of personal deliberations and researches although he disavows any intention of formulating normative ethics. It is his contention that through a study of actual value choices made by healthy individuals, one can discover and describe certain biologically and genetically based value tendencies in human beings. The

nature of things is to be determined neither by metaphysical construction nor by divine revelation, but by empirical inquiry which is not restrictive and positivistic as experimental studies are.

THE STARTING POINT: SELF-ACTUALIZING PEOPLE

Maslow hypothesizes that these "higher values" (or the "eternal verities") are what we find as free choices among relatively healthy people, who are "evolved, self-fulfilled, mature, etc." These values are related to each other in a hierarchical order of strength and priority.[108] The actual characteristics of self-actualizing people parallel at many points the ideal urged by the religions, such as

> transcendence of self, the fusion of the true, the good and the beautiful, contribution to others, wisdom, honesty and naturalness, the transcendence of selfish and personal motivations, the giving up of 'lower' desires in favor of the 'higher' ones, increased friendliness and kindness, the easy differentiation between ends ... and means ...[109]

If the choosing of the "good human being" is dependent upon a definition of the 'good' and 'human,' Maslow recognizes that there are some real logical and theoretical difficulties involved in this regard. The selection of the 'good' human beings is like the hunt for "good specimens" by a taxonomist, or by an art gallery director for a "good Renoir," or the "best Rubens."

> In exactly the same way, we can pick the best specimens of the human species, people with all the parts proper to the species, with all the

> human capacities well developed and fully functioning, and without obvious illnesses of any kind, especially any that might harm the central, defining, sine qua non characteristics. These can be called "most fully human."

If there is a circularity in this description of 'good,' Maslow is not unnerved by this situation, since the difficult task of teasing out man's psychobiological values is not achieved through a priori concepts, but through man's instinctoid tendencies, which, however, in the face of cultural forces, are rendered weaker. "Difficult or not, it is possible in principle."[111]

The integrated hierarchy of needs places the higher needs over the gratified lower needs, which, however, may not necessarily disappear even in a non-active state. This means that the process of regression to lower needs always remains a possibility and, therefore, these "healthily regressive value" (he calls them "coasting values") choices must be considered as natural and instinctoid as the so-called higher values.

ENVIRONMENT: CONTEXT OF EDUCATION

The higher needs of the human beings are founded upon the lower needs, "a clear and descriptive fact" as Maslow states it. The best way to develop the higher needs is to gratify the lower needs and the maintenance of a fairly good environment. If human beings, in their own nature, press toward for a fuller realization of self and fuller Being, in the scientific sense that an acorn may be said to

be pressing toward being an oak, the role of the environment is ultimately to permit and help them to actualize their own potentialities, not vice versa.[112] The potentialities are existent in inchoate or embryonic form. "A teacher or a culture doesn't create a human being. It doesn't implant within him the ability to love, or to be curious, or to philosophize, or to symbolize, or to be creative."[113]

MASLOW'S META-ETHICS: A CRITIQUE

The meta-ethical views of Maslow, professedly put forward as a descriptive and neutral ethical investigation, run into a number of difficulties. His claim that "we can in principle have a descriptive, naturalistic science of human values" is, in itself, a meta-ethical statement, which indicates that moral and other value judgments are actually rooted in the nature of things. The adequacy of his definitions and descriptions of 'good' and 'right' are rightly attacked as circular and tautological. He is probably correct in asserting that we all carry within us at some level of consciousness a conception of what a "good specimen of humanity" means and that with proper effort it could be adequately articulated. But he failed to recognize the normative character of his statements connected with this description or definition.

Again, his meta-ethical theory of justification for the definition of 'good'to the values of human conduct is

an inadequately resolved problem. "His appeal to a definition in support of a principle places the whole burden of justification on the definition, and leaves open the question of how the definition is justified, or why we should accept it."[114] Stated differently, the definition itself needs to be justified and the process of justifying it involves the same problems that justifing a principle involves.

Maslow is understandably dissatisfied with the first and second wave psychologists in their explanations of human nature and wants to pursue further our understanding in this area. He is also concerned with a less empirical task of recommending certain aspects of human nature as more worthy of pursuit than others. But he failed to see that this noble venture cannot be accomplished without departing significantly from a strictly logical thesis and the unavoidable normative issues suggested by his ethical doctrines. He seems to attempt too much from too narrow a platform. The relationship between facts of human nature and values in human conduct is not a simple one; the "Is"-"Ought" dichotomy still prevails.

MASLOW'S CONTRIBUTIONS TO EDUCATION

Maslow's contributions, however, cannot be glossed over. His concept of human growth, with its much needed positive approach to psychological growth may prove to be a significant breakthrough. The implications of his discovery

of "growth motivation" strongly dispute the "deficiency needs" theory of some of the current psychologists. Further investigation of the motivational condition inherent in his concept of self-actualization may recommend itself as a standard of growth to be pursued in further studies.

The implications of Maslow's theories on education sharply delineate the vaguely held notion of learner needs in curriculum development and instructional technology. For Maslow, 'need' implies a motivational use, a physiological or psychological deficiency which must be "optimally fulfilled by the environment." Education which has largely directed its energies to the satisfaction of what Maslow labels as D-Needs (or Deficiency Needs), such as vocational training, needs to redirect itself to promote B-Needs (Being Needs) as well as for self-actualization and peak experiences. One can see the parallelism between Maslow and Maritain when the latter proposes the distinction between individual and person.

RESEARCH QUESTIONS

The present study proposes to research the following questions:

1. How do humanists and pragmatists differ or agree in the way they respond to instructional development decision points which are based on the IDI Model?
2. Why do they so differ or agree?

3. Are there steps[115] in the IDI Model that are not responded to by either or both of these philosophies?
4. What is the effect on the IDI product or instructional solution when decisions are consistent with one philosophy, and not with the other?

DESIGN OF THE STUDY

To extract the elements of critical dimension for both humanism and pragmatism is a laborious task, but one well within the methodological rigor of a research study, provided suitable and adequate criteria are established for data collection, organization, and interpretation.

The present study has arrayed the critical writings of two authorities each for pragmatism and humanism. After this was achieved, their writings were scanned to select key writings that were most representative, which provided models of these two philosophical positions, for purposes of comparison and contrast with the IDI model and its decision points. The key ideas of these philosophers are already given, but other relevant sources were searched as well, to illumine the different shades of opinions that are so characteristic of these two philosophies.

The design will have the following steps.

1. Explain with an IDI introduction each of the twenty-four decision processes in the IDI Model.

2. In the light of the specific philosophical features of humanism and pragmatism, cull representative passages from the philosophical writings of these philosophers, with additional explanations and augmentations from related works that bear on the twenty-four processes and present them immediately after the review or introduction of the processes. Each of these decision processes is followed by one or more decision points involved in the process which the instructional developer will have to deal with in the process of ID decision making.

3. Based on the passages from humanism and pragmatism, examine these decision points attributed to respective decision processes so that the comparison of each decision point will be consistent with each philosophy. The critique will then examine each decision point in terms of CONGRUENCE (Do both the pragmatists and the humanists make the same decision at a given decision process?), VARIABILITY (To what extent do their decisions differ?), and whether they have any opinion at all on a given decision process.

4. Provide examples for each of these decision points wherever possible, to illustrate the differences in philosophical positions.

5. Continue such comparative analyses until all the twenty-four decision processes have been covered. Examine categorized IDI steps to discover corresponding versions of steps both in pragmatism and in humanism.

6. Investigate the effect on the ID product or instructional solution when decisions are consistent with one philosophy, and not with the other (See FIGURE 5).

7. Determine the implications of these findings.

After the tri-partite methodological investigation through (a) data collection, (b) data organization, and (c) data interpretation, the study proceeds to a summary of the IDI Model as viewed and acknowledged from humanist and pragmatist viewpoints. The preceding analytical studies were focussed to generate a systematic and congruent picture of both these philosophies vis-a-vis the IDI Model through a comparison (CONGRUENCE) and contrast (VARIABILITY) of the philosophical stances of both humanism and pragmatism.

Thus, the philosophical underpinnings of humanism and pragmatism implicit in the IDI Model of instructional Development would be shown as well as the extent of their impact determined.

SUMMARY

In this chapter we have seen the reason for a philosophical study, an <u>apologia</u> for its relevance, the IDI model as well as humanist and pragmatist literature that will be studied for the examination, a concise treatment of the major philosophical tenets of both humanism and pragmatism, as well as the design of the study itself. Chapter IV concentrates on carrying out the study itself.

FIGURE 5: ILLUSTRATIVE COMPARISON OF DECISION PROCESSES WITH PHILOSOPHIES

IDI Decision Process	Specified Decision Point	HUMANIST DECISIONS	PRAGMATIST DECISIONS	CONGRUENCIES & VARIABILITIES
e.g.				
DECISION PROCESS "h"	Decision Point h 1: "Should behavioral objectives be used?"	Citations from authoritative sources in Humanism	Citations from authoritative sources in Pragmatism	CONGRUENCY: Agree or Disagree
State Terminal Performance Objectives	Posed in the form of a question.			Pragmatists in general agree with decision process "h."
Explanation from IDI literature	Examples cited	e.g.	e.g.	Humanists in general disagree with "h."
		MARITAIN	W. JAMES	VARIABILITY: accept with reservations. Maslow agrees with some points.
				NO OPINION: This decision process was not specifically responded to.

FOOTNOTES

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[35]James, Pragmatism and the Meaning of Truth (1978), p. 257.

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[38]Copleston, A History of Philosophy, p. 93.

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[67]ibid.

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[113]ibid.

[114]MacDonald, ibid., p. 89.

[115]Steps and decision processes will be used synonymously in this study.

CHAPTER IV

COMPARATIVE STUDY

Introduction

This chapter arrays the three-stage (DEFINE, DEVELOP, and EVALUATE), nine-function, twenty-four-step IDI Model which forms the basis for the analytical comparative study for the pragmatist and humanist philosophical standpoints, that follows.

DEFINING INSTRUCTIONAL DEVELOPMENT

The AECT Task Force on Definition and Terminology provided an "endorsed" definition of Instructional Development (ID) as follows:

> INSTRUCTIONAL DEVELOPMENT: A systematic approach to the design, production, evaluation and utilization of complete systems of instruction, including all appropriate components and management patterns for using them; instructional development is larger than instructional product management, which is concerned with only isolated products, and is larger than instructional design which is only one phase of instructional development.[1]

The all-inclusiveness of the AECT definition has not stilled voices of discontent among practitioners of the profession. "The lingering disagreements persist because

definition is closely related to philosophical positions."[2] The explicitness of the AECT definition seems to be the major flaw: it is too explicit to be profitably applied. Kent Gustafson's definition of ID is preferred by some. He defines it as "a process for improving the quality of instruction."[3] It not only has the quality of being easily understood, but is sufficiently profound due to its focus upon the learning event and the learner.

The thrust of all these efforts at defining ID has culminated in an increased understanding and acknowledgement of ID as a systematic process. Instructional development is now generally defined as a systematic process for selecting, adapting, or creating (i.e., developing) an instructional innovation which has the potential for improving teaching and learning. The various ID models, ranging from the 70-step "maxi" model of Allen Abedor to the six-step Kaufman model, however, reveal "a surprising paucity of information relating to the antecedent conditions necessary for successful implementation of the processes,"[4] nor have they clearly delineated the various reasons that they found cogent in modelling instructional development to what they believed to be "instruction" and "learning." This may doubtlessly be attributed to the articulated influences of their inarticulate premises or philosophical orientations.

Instructional development is referred very often to the systems approach. There is an abounding confusion with

respect to the definition of ID: systems approach, instructional development, instructional technology, and educational technology are used interchangeably. A man-machine system in the utilization of resources has given rise to a problem, according to some, of man attempting to maximising the minimum, i.e., the resources, instead of minimising the maximum.[5]

Unacknowledged yet implicit in the multi-level activities of the socio-political man, the systems approach concept had offered, from the early beginnings of history, guidelines for an understanding of the environmental world man lives in. With the Age of Enlightenment, the systems approach concept began to emerge as a rational principle for focussing on relationships that welded man and nature; with the triumph of natural sciences in the application of scientific method two centuries ago, systems approaches are becoming increasingly acknowledged as a powerful method for understanding man in his many worlds of activity.

The systems approach to instruction is exemplified in the Dale Hamreus Model which was the forerunner of the IDI Model. Stage I of this model, called "systems definition and management" includes those start-up activities that must be planned and organized before the next two stages could be initiated. During this stage, the identification and marshalling of all the needed human and nonhuman resources are accomplished. Stage II, "Design Analysis," is

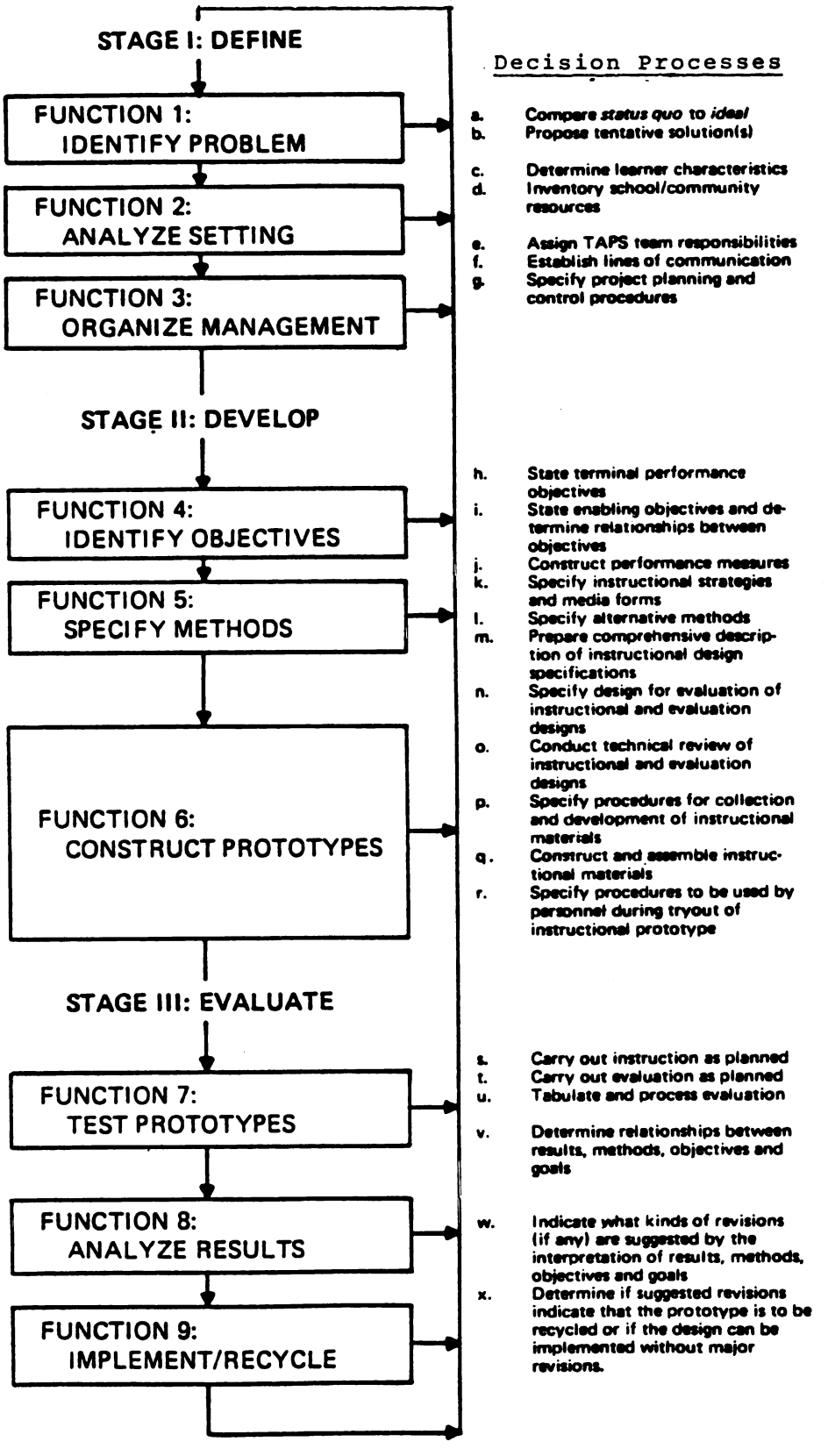
concerned with performance standards and material specifications. Constraints within the system are identified and related to feasible solutions. Stage III, concerned with "Development and Assessment Procedures," details the construction and empirical validation of prototypes with corrective iteration of all aspects of development and evaluation until the new system could be "satisfactorily" launched.

The IDI Model reflects many of the concerns of the Hamreus Model, especially in its systematic approach to instruction. The IDI Coordinator's Manual provides not only information on general systems theory as a method, but also guidelines to the participant in assuming responsibility in its three stages of Define, Develop, and Evaluate. It presents and defends the logical necessity of a systems approach.

INTRODUCTION TO COMPARATIVE STUDY

Although the twenty-four processes in the IDI Model (See FIGURE 6) are labelled "decision points," a closer analysis reveals that they are best described as "processes" along which an ID team is required to make a number of specific decisions. If not explicitly stated, at least implicitly imbedded in these decision processes are a number of specified decision points with which this comparative study is vitally concerned. The extensiveness of such decision points preclude their comprehensive treatment; for

FIGURE 6 TWENTY-FOUR DECISION PROCESSES OF IDI MODEL



example, Decision Process "k" is a process regarding the specification of instructional strategies and media forms which theoretically lead to an extensive consideration of various media, each taken separately--a task that could be uselessly prolonged. Consequently, this study is concerned economically with two decision points or more, as warranted, in each of these twenty-four decision processes.

Each of these twenty-four decision processes are, therefore, presented sequentially with an IDI Introduction which is a descriptive explanation of the decision processes provided in the IDI Coordinator's Manual.

The more specific decision points with which the instructional developer or the ID team has to deal with under the decision processes are then analyzed in terms of how a pragmatist or a humanist might respond to the decision point in question. These are critically examined from humanist and pragmatist viewpoints through a consideration of relevant philosopical thoughts and passages drawn from pragmatist and humanist writings.

Examples are provided to illustrate the agreement or divergence (CONGRUENCE) of pragmatist and humanist philosophers with these decision points; if VARIABILITY (agreement with reservations) is involved, then it is so indicated. It is also possible neither have anything to say on these questions.

Thus, this comparative study seeks to analyze some of the decision points in each of the twenty-four processes

involved in the instructional development decision making.

STAGE I: DEFINE

DECISION PROCESS "a" (Function 1: Identify Problems):

Compare Status Quo to Ideal

IDI Introduction: A crucial step in the systems approach, states the IDI Coordinator's Manual, is the definition of a problem with an estimate for its solution. Through the collection of relevant information from the total setting in which the problem is said to have emerged, one may be able to define the various elements of this setting and their interactions and relationships. This brings into focus the necessity of understanding general systems concepts like suprasystem, subsystem, system of interest, system dissonance and the boundaries of open and closed systems. Analytical descriptors like efficient-inefficient and appropriate-inappropriate are likewise used and loaded value terms are shunned, such as good-bad and right-wrong. It is not required that the problem definition be thoroughly completed before the next step, because additional information garnered in later processes could cause the instructional developer to modify previous decision points and their concomitant decisions.

The problem in the IDI Model is defined as any discrepancy between the status quo (the way things are) with

an ideal situation (the way things ought to be). When ID teams attempt problem solving, there are bound to be different opinions regarding ideal solutions with its attendant system dissonance or emotional heat. This fact may lead to a need for distinguishing symptoms from real causes.

The IDI Coordinator's Manual states that the ideal could be conceived as "the collective image of the way the world ought to be" and the individual image itself is made up of a person's "total perception of the world."[6] This perception, whether group or individual, is shaped by experience, knowledge, and attitudes.

There are a large number of decision points that an instructional developer would be expected to deal with in this process, but only five of the many will be considered here.

a 1: This decision point for decision process "a" (Compare Status Quo to Ideal) can be formulated as a question: "Does there exist a real problem?"

If there is no real problem or if it is not solvable with available resources, the ID team may decide to abort a project. In a client-ID team relationship, it is often the perception of an apparent problem by the client that brings the instructional developers to the scene. This perception of an "apparent" problem by the client needs to be attended to, since it originated as a perceived discrepancy between the current state of affairs in instruction (status quo)

and how things ought to be (ideal). This perception by the client may be a mistaken one, but the ID team cannot make a valid judgment about the truth or falsity of this perception until they have examined detailed information concerning the status quo and the ideal. So the ID process is triggered when a level of dissatisfaction within the system arises.

According to pragmatists, the process of inquiry starts when the stage of equilibrium is upset by an "irritating condition that usually originates from external surprises."[7] James calls this stage of equilibrium commonsense when human mind is laden with discoveries and knowledge of the past.[8] Similarly, Peirce calls it the current state of mind "in which you are laden with an immense mass of cognition already formed,"[9] which consists of a number of fundamental beliefs as a result of experience over a period of time. The status quo, for the pragmatists, is the present state of mind; scientific inquiry does not start from a priori conditions or self-evident truths.

For Maritain, the humanist, the relationship between the status quo and the ideal is more than a carbon copy faithfulness, because if the status quo were identical to the ideal in every detail, there could be not discrepancy and hence no real problem would exist. For the humanists, a process is initiated when there is an unsatisfactory state

of affairs. It is the principle of individuation, which is the constitutive principle of an individual, that brings about this unsatisfactory state of affairs, Maritain says. The reality of man involves both the individual and the person, integrally considered, and the person tends to surge upward to realize fully his destiny in God, while individuation keeps him shackled. Education may provide for the liberation of the person. Maslow, on the other hand, finds that there exists a state of tension and deprivaton when basic needs are not gratified. In other words, lower needs which represent "deprivation motivation" will have to be first met before higher needs, which represent "growth motivation", can be successfully pursued. "The need or drive presses toward its own elimination."[10]

Example: Dr. Smith, who teaches Biology 101 to undergraduates in Lincoln University, finds that the Fall term enrollment for his classes has hit an all-time low of 45 students. This is an unsettling situation for Dr. Smith who needs more students in Biology 101 to make that course viable and, to some extent, self-supporting by way of revenue from course fees. In such a circumstance, the ID team asks, "Is there a real problem?" If the drop in enrollment is due to a university policy to phase out this course by discontinuing to make it a prerequisite for other disciplines, there exists no real problem. If not, this could be termed an unsatisfactory state of affairs. Both pragmatists and humanists agree that an irritating external

condition has arisen in this case which has upset the equilibrium of the organism or system.

a 2: "Should an ID team monitor an instructional situation where no evident discrepancy exists?"

Sometimes, an ID team may be invited to monitor an instructional scene where apparently no problem exists and where their task would consist in acting as experts, diagnosing the flow of instructional process and checking the symptoms for a potential instructional breakdown. The rationale being that they would act proactively to prevent any potential irritating conditions, very much like a medical doctor who administers a checkup for cancer. To act reactively, when the cancer has dangerously spread would be too late for the patient. But, even here, a comparison is involved, for implicit in any monitoring situation is a conceptualization of an ideal state of affairs, whether this be in health or in instruction, to which the current state of affairs is compared.

Thus it is apparent that both pragmatists and humanists would agree that to decide as to whether a problem exists or not is in agreement with their philosophies.

The same information or comparison data will be used by both pragmatists and humanists. In this case, however, the treatment of the data or the terms of comparison pragmatists and humanists would bring to bear on the identification of the instructional problem would be

different for these two philosophies. Consequently, what appears to be a discrepancy for the humanists may not be so for the pragmatists.

Example: Biology 101 has a respectable student enrollment of 105 students; but, 65 per cent of its classes are on ITV which frees Dr. Smith to lecture at other university campuses on his successful course program. Inexplicably, thrice in one week the TV cable in the classroom was found cut and thus classes were disrupted. When an anonymous letter reached the departmental chairman with the message, "We want a flesh-and-blood teacher!", the chairman realizes that something is amiss.

For the pragmatists, Biology 101 does not evidence any discrepancy in the state of affairs, but from the humanist point of view, there indeed exists a discrepancy which was brought about by the dehumanizing treatment of the students by engaging a TV teacher.

a 3: "What criteria should be employed in deciding whether discrepancies do exist?"

The pragmatist would apply the specific pragmatist maxim: "Does it work?" or "What are the conceivable practical consequences of such a decision?" The humanist concern would be expressed in the question: "Does it work and does it work for the good of the human being?" If the proposed solution works and, in so doing, goes counter to the humanist concerns, i.e., the good of the human person, as evidenced in the case of making the learner a passive

recipient and conditioned to react automatically to external stimuli with the resultant degradation of his or her humanity, the humanists would argue that a discrepancy exists.

Example: In deciding whether any discrepancies exist in the current status of Biology 101, the pragmatists would look into the effectiveness of instruction, for example, the use of ITV, which makes up 75 per cent of classroom instruction, its effectiveness in course content, treatment, and presentation. For the humanists, the excessive use of ITV and the resultant dehumanization of the students would constitute the criteria for deciding that a discrepancy does exist, even if the course content, course treatment, and course presentation were adjudged effective.

The differential application of criteria by the pragmatists and humanists may be reflected in rank-ordering problem areas or discrepancies in instruction. After a brain-storming session which lists many discrepancies, the ID team needs to determine which among these discrepancies seems to be the most important and urgent one for consideration.

a 4: "What kinds of rank-ordering or prioritization of decisions are acceptable?"

According to the pragmatism of Peirce, inquiry starts with a genuine doubt and all such doubts, inasmuch as they are irritating conditions, have to be resolved before

thought comes to rest in belief. A rank-ordering will have to be seen as a temporary phase and eventually all genuine doubts will have to remove this irritation so that thought can relax and rest for a moment.[11] James speaks about our various purposes being at war with each other; where one cannot crush the other out, they compromise, "and the result is again different from what any one was distinctly proposed beforehand."[12]

For the humanists, in general, the fuller development of the human person is of paramount importance. The instinctoid basic needs, according to Maslow, initiate a goal-directed behavior and are classed as higher and lower needs; there is a prioritization possible in such a schema but Maslow cautions that across different people, these may account for levels of similarities and differentiations.

Example: An acceptable rank-ordering of problems in Biology 101 may be assumed as follows:

1 - Lecture method in instruction is boring

2 - Biology 101 is no longer a prerequisite

3 - Inadequate funding

4 - Nationwide slump in college enrollment

Such a rank-ordering of problems would explain to pragmatists why the enrollment for Biology 101 keeps plummeting: instruction is ineffective. Add another reason to this list: the course is offered with TV lectures and the teacher is most often absent from the classroom, and the

humanists would rank it high as the problem or discrepancy where the individual student is downgraded because he or she has to interact with a nonhuman instructional medium.

a 5: "Given knowledge about the current state of affairs how does the instructional developer decide what should constitute the ideal situation?"

The pragmatists assert the reality of an ideal situation. The reasoning, according to the pragmatists, consists in this. A process of inquiry is instituted to reestablish and "fix" beliefs, i.e., to render them secure against surprise and irritating conditions. The resolution of doubt, or the removal of obstacles, results in attainment of a new belief. This new belief is both a stopping-place and a new starting-point, since belief always contains a reference to action. The logical corollary of this thinking is that resolute action requires firm belief; but belief, in itself, contains a reference to action, which means that only when belief is firmest, action would not ensue. As a result, an ideal situation, where belief is the firmest without any further reference to action, can be aimed at, but never attained. All one could hope for would be approximations to the ideal. In a similar way, James takes the pragmatic method to mean a theory of truth, a process of verification. Truth is not a stagnant property in an idea, through which we are led into other ideas and experiences with which the original ideas remain in agreement.[13] This teleological dynamism inherent in every kind of inquiry

covers the process of conduction from present idea (status quo) to a future terminus (ideal situation) that can be verified.

As for humanists, they also affirm the processual progression from a status quo to an ideal situation. Maritain asserted: "Truth in the mind consists in its conformity with the thing."[14] There is a purposive dynamism between these two in which, "the knower, while all the time keeping its own nature intact, becomes the known itself and is identified with it."[15] Maritain makes a distinction between speculative and practical knowledge. While 'speculative' knowledge is concerned with the 'true' (the acquisition of knowledge for its own sake), the 'practical' knowledge is concerned with the 'good' (acquisition of knowledge for right conduct). The 'practical' knowledge or science par excellence is ethics, which is a body of knowledge that deals with human actions and the moral concerns that they involve. But a system of ethics cannot be constituted without first answering the ultimate questions: "What is man? Why is he made?" Thus, the ultimate destiny to which ethics tends to is the Supreme Good (Summum Bonum) which is unattainable through purely human means, unless aided by grace. The Supreme Good can only be aimed at, but not totally realized.

The Freudian conception of human functioning as a homeostatic tendency to return to a low, steady level of organismic tension is rejected by Maslow because such a

conception is inadequate to account for the complex behavior of human beings which precipitate higher levels of tension. In place of these Freudian conceptualizations, Maslow proposes his own explanations of such behaviors as growth-oriented efforts of self-actualizing people. Such a theory implies progressions from the current state of affairs toward an ideal state, toward a fuller Being.

Example: The ideal state which Dr. Smith could aspire to may have the following criteria: a student enrollment of about 120 per term, a mastery of 85 per cent or more of the course content by the students, the possibility of a "Distinguished Professor" award for Dr. Smith next year, and his own satisfaction in teaching, with an accompanying increase in self-worth and enjoyment. Both the pragmatists and humanists would accept such an ideal state, although the increase in self-worth and enjoyment would be points that the humanists would opt for. If there is a concomitant increase in the self-worth of the students and their fuller development as human beings, this would be humanistic too.

DECISION PROCESS "b" (Function 1: Identify Problem):

Propose Tentative Solutions

IDI Introduction: According to the IDI Model, the search for an ideal solution may ordinarily result in a number of tentative solutions with varying degrees of

probability in meeting a need. If the problem has been adequately defined and the symptoms of the instructional malaise have been carefully sifted from its causes, it is often possible to arrive at solutions which must have the prerequisite of meeting effectively these instructional problems. In addition, there may be a need to consider the ramifications of each of these solutions. If the evaluation of an instructional solution can be termed as a retrospective phase where the effectiveness, efficiency, and relevance of the solution are measured and judged, the proposal of tentative solutions should be considered as a prospective phase, although in this case the terms of comparison will less rigorously be employed.

Given this IDI Introduction, there are a number of decision points that an instructional developer may be expected to face.

b 1: "Should solutions be assumed as tentative? Should not the developer begin with a firm and valid solution?"

The pragmatists view solutions as tentative because thought is always in transit, and the element of tentativeness is inherent in all thought processes. For Peirce, as well as for James, tentativeness belongs essentially to all inquiries and, in principle, can never be overcome.[16] One is constantly forced to believe and act--here and now--against the background of an imperfect knowledge, which fact points out both the importance and precariousness of

the 'practical' from a pragmatic point of view. Action does not require one to convert a tentative knowledge into an absolute certainty, but only to "make up our minds."

The humanists do not seem to have specifically dealt with the question of tentativeness of solutions. Two extrapolations may be relevant here. Maslow argued that human beings, in their most human activities, actually tolerate and even enjoy increases rather than decreases in tension; such an increased tension is in tune with the future-oriented, complexly organized behavior that strives for self-actualization. This may point to the tentativeness in the functioning state since in a satisfactory state of affairs, human functioning would have attained equilibrium. Secondly, personality is continually transacting with environmental contexts.[17] This constant interaction invests the input with a certain element of tentativeness. From these two extrapolations, it seems that tentativeness of solutions was acceptable to humanists, but they did not offer any specific views on this subject.

Example: Many tentative solutions for the problems of Biology 101 may be offered: get another teacher (Dr. Smith may not like it), initiate a campus-wide promotional campaign for Biology 101, make it a prerequisite for allied disciplines, improve the course content with instructional aids and other strategies to give it a face-lift, etc. All of these are tentative solutions, in the sense that they can only approximate the ideal solution. At this point in

the ID process any single solution cannot be offered as the solution or the valid one, because in the process of verification, we enter the area of the probable. The pragmatists would accept them as tentative, but the humanists have not any consideration to this point, even though the extrapolation of their philosophical stand indicates that they would accept them as tentative.

b 2: "Should there be more than one tentative solution?"

This is a question of successive approximations in which more and more information about the probable success of a solution would be welcome. The pragmatist's preparedness to act, initially resides in tentative or incomplete knowledge, but the call to action, here and now, prompts them to embrace one solution as more probable to "work" successfully than the other. A greater amount of information will minimize the probability of failure. Thus the pragmatists will opt for more than one solution until finally, they have sufficient information to make up their minds to act. The humanists, as noted earlier, have not considered the question.

Example: To meet a particular instructional need, 1) team teaching, 2) individualized instruction, or 3) instruction with more sophisticated aids, etc., may be offered as alternative solutions. The pragmatists will equally weigh their effectiveness till they select one as the more appropriate. From among these three solutions, the humanists

would opt for individual or personalized instruction if it also achieves effectiveness.

b 3: "What decision rule should be used in deciding most suitable solution in an instructional context?"

The pragmatic method is designed primarily to settle metaphysical, linguistic and other disputes that otherwise might be interminable. If solution X and solution Y are offered, both claiming equal weight and consideration as capable of achieving a specified instructional objective, these two solutions will be tested by the pragmatists; if no difference is found between the respective practical consequences of these two solutions, solutions X and Y are one and the same, to all practical intents and purposes, and the claim of greater effectiveness is purely a verbal quibbling. If, however, one solution is found to be superior to another, the former is to be adopted.

For the humanists, Maritain lays down four fundamental norms or rules of education: (1) to liberate the principal agent (i.e. the learner) to grow in the life of the mind, (2) to stress inwardness and internalization of education, (3) to foster internal unity of man, and (4) to free human mind through the mastery of reason over things learned.

Example: For effective and efficient instruction in Biology 101, Dr. Smith and Dr. Jones are proposed as competent teachers to handle this teaching assignment. If no difference is found between the practical consequences of their teaching the claim for superiority in teaching for

one is unfounded; but if Dr. Smith's teaching is found to be superior, he should be retained. But the humanists would weigh the effects of dropping one or the other with the effects of their teaching on the students if, for example, rote memorization of course content is made mandatory.

DECISION PROCESS "c" (Function 2: Analyze Setting):
Determine Learner Characteristics

IDI Introduction: The identification of the problem and the proposal of tentative solutions enable the ID team workers to define the kinds of information they need for analyzing the setting.

One of the basic steps in this analysis of the setting is to gather as much information as possible about the students who are the target audience. Undoubtedly, there is a multiplicity of such learner characteristics that could be collected, but the crucial question that guides the process of data gathering is the following: "What decision/s will be made on the basis of this information?" Some categories of information may prove to be interesting, but otherwise costly and useless. Once a decision is taken concerning the kind of information to be gathered, systematic and objective means must be employed in obtaining this information, so as to make this process efficient and the data so gathered accurate. The following represents the usual kind of information about learner characteristics

that are gathered: age, sex, ethnic composition, religious affiliation, family size, socio-economic background, peer group interaction, emotional and physical health, grade reports, vocational test scores, and self-image.

This decision process "c" can generate a number of related decision points.

c 1: "Should learner characteristics be determined?"

The pragmatists have not directly dealt with this question of detemining learner characteristics. But the pragmatic concept of 'verification' involved in scientific inquiry can be extrapolated to provide an understanding for this decision point. Verification, Peirce says, is susceptible of degrees, and there will be considerable variation in the firmness with which different beliefs are 'fixed' when thought finally comes to rest. With added information on the nature of the problem, the proposed solution, the methods employed, and the target audience, the verification finally reached will be firmer and proximate to reality. Thus, it could be said that the pragmatists emphasize the reason for determining learner characteristics, but there is no specific reference to it in the pragmatic literature examined.

As for the humanists, who are concerned with the improvement of human nature, determination of learner characteristics is an essential component in the process of this improvement. "Improve human nature and you improve

all," Maslow said, but "before you improve human beings, you must understand them ... We just don't know enough about people and this is the task facing the psychologists."[18] By psychologists Maslow does not mean just professors of psychology, but "all sorts of people" including educators. It is from this position on the uniqueness of human beings that Maslow is able to accommodate the concepts of projective techniques, observation, direct self-report, performance tests, etc., as appropriate sources of information about learner characteristics.[19] Thus, a humanist instructional developer will find valid reasons for undertaking this task of knowing more about learner characteristics.

Example: To know the entry level competencies of the students which data can be gathered by questionnaires, grade reports, etc., can really help the specific forms in which the course Biology 101 has to be restructured. The humanists would agree to this point, and the pragmatists, in general, are not averse to such procedures.

c 2: "Should the determination of learner characteristics include also the attitudes and values of the learner?"

The pragmatists are silent over this decision point. But the humanists, with their concern for the Fuller Being of the human beings or their integral development, are intensely involved in establishing the right attitudes and values in the learners that would enable them to grow into

"fuller maturity." To realize fully their potentialities, capabilities, and talents, learners need to have an adequate understanding of the attitudes they manifest and the values they cherish.

Example: With a view to finding a suitable solution for Biology 101 problems, questionnaires are distributed in the class to find out information about the students who enroll, their grade points, their career goals and aspirations and the reasons for choosing this course. "Good idea," the humanists would say, "but do not forget the end, nor allow the means to dominate the end."

DECISION PROCESS "d" (Function 2: Analyze Setting):

Inventory of School and Community Resources

IDI Introduction: The analysis of the instructional setting also envisages a determination of the school and community characteristics that may be related to the problem and its solution. This kind of information acquaints the ID team of conditions under which they must work and the various kinds of resources they might reasonably expect in finding a solution. If additional resources are required, then the question arises where and how these could be procured. Within the constraints of available resources, the tentative solution may also undergo some revision.

Grouped under this decision process are a number of decision points that an instructional developer would face.

d 1: "Should the ID team consider human resources as an essential component in seeking an instructional solution?"

The pragmatists accentuate the importance of this decision. One of the six distinctive characteristics of scientific inquiry, as a method of fixing belief, is that it is a cooperative, social venture, not an individual affair. "The progress of science cannot go far except by collaboration," Peirce stated, "or, to speak more accurately, no mind can take one step without the aid of other minds."[20] One readily sees this trait being realized in physical sciences where a true scientist attaches positive value to the views of every man as competent as himself. At another place, Peirce stated that the very origins of the conception of reality showed that this conception essentially involved the notion of a community, without definite limits, and capable of definite increase in knowledge.[21] Thus, the pragmatist stand is very clear when it comes to the matter of marshalling all available human resources in this common venture.

Maritain, for the humanists, is the chief spokesman to attest to the necessity of availing all possible human resources in educational enterprises. Man cannot progress, both morally and intellectually, he said, "without being helped by collective experience previously accumulated and preserved by a regular transmission of acquired knowledge."[22]

Example: Dr. Smith and the ID team would find it expedient to enlist the help of colleagues, graduate assistants, media technicians, etc., a decision with which the humanists and pragmatists would heartily concur. These are human resources and the humanists would place a premium on such step.

d 2: "Is it advisable to catalogue the nonhuman resources as a component in the ID solution?"

The pragmatists have not considered this question, but an extension of the Peircean notion of 'community' of scientists can be logically seen as not restriced to their statements and views, but as extended to include their achievements as well. A technique of conducting a lab experiment in electrolysis is a nonhuman resource, but it also enshrines the accepted norm for a scientific 'community' and, in this sense, it is a decision that the pragmatists would endorse.

Maritain specifically speaks about the necessity of the state involving itself in education (e.g. by providing funds) and the arrangement of educational levels with physical arrangements which would aid the students to learn. For Maslow, the possibility of men and women becoming more fully human is very real when they are given better conditions: "basic needs and meta-need gratifications via all sorts of external social, political, economic, biological conditions."[23] He decries, however, the cult of education for "earning a degree" and contrasts

it with the school resources that are conducive to the humanist goals of education.

Example: For Biology 101, it would be advisable to have the classroom equipped with CCTV (closed circuit TV) or be close to the instructional media center. The pragmatists would welcome such a decision, but the humanists would insist that the use of instructional TV be so conformed as not to be dehumanizing to the students.

DECISION PROCESS "e" (Function 3: Organize Management):

Assign TAPS team Responsibilities

IDI Introduction: The ID team consists of teachers, administrators, policy makers, and specialists who are experts in educational psychology, curriculum, evaluation and media design and production. They are expected to assume responsibilities of steering, designing, developing, and operating the ID product. Some of these tasks may take the form of policy making and team coordination in monitoring team performance, approving expense requests, establishing timelines for completion of various phases of the ID program; these also could involve specification and development of materials and the tryout and evaluation of prototypes. Each member of the TAPS team will have a list or responsibilities assigned to them, after they had consented to such an arrangement, as well as the necessary authority commensurate with these responsibilities. They aim at

effectiveness and efficiency.

For the sake of brevity, two of the decision points involved in this process are examined here.

e 1: "What management model should be used in this task? For example, should it be democratic or authoritarian?"

Peirce lists and evaluates four ways of 'fixing belief' among which are the scientific method (which he accepts) and the method of authority (which he rejects). Judged in terms of material efficiency, Peirce finds the method of authority vastly superior to the method of tenacity, but this method of authority outrages the sensibilities of any rational man, because of the premium it places on cruelty, ruthlessness, and intellectual slavery.[24] It is evident that an authoritarian structure goes counter to the community of scientific minds that Peirce upheld.

For humanists, free will and the liberation of the spirit are of supreme importance. Both Maslow and Maritain would even argue for the inclusion of the learners in such a management model because they are the primary factors in the process of education.

Example: If the TAPS team for Biology 101 decides to institute a democratic management model by giving equal voice and vote for all participating members (including student representatives, the humanists would say), this process would be acceptable to both philosophies. The

authoritarian method will be rejected by both. If a democratic method without student representation is pursued, the humanists are more likely to reject it.

e 2: "How will the assignment of responsibilities be determined?"

Among the pragmatists, James characterized ideas and beliefs as 'plans of action,' theories as 'instruments' or 'modes of adaptation to reality.' His pragmatic method with its "practical consequences" provided an arbiter in the court of appeal where what is "useful and workable" was the criterion. His main preoccupation was the theory of truth, which was anchored in a theory of good and value. The truth is that which is valuable, expedient, workable, and successful. "'True' refers to such of those means as work efficiently and satisfactorily."[25] If the assignment of TAPS team responsibilities to different team members will work toward true and workable instructional product, then, James sees such a decision as compatible with the pragmatic viewpoint, without concerning himself with the apportioning of responsibilities.

Maritain acknowledges both educational and extra-educational spheres impinging upon education. These spheres of influence should act responsibly through mutual help, knowing at the same time that there will always be a reciprocal tension between various team members that cannot be completely overcome. Teachers are ministerial agents in

education and a dynamic factor in the intellectual formation of a learner. The primary dynamic factor, however, is always the "internal vital principle in the one to be educated."[26] TAPS teams are welcome in furthering the advancement of the educative process, but these should not be construed as the totality of agents in this important venture. The predominant concern here is not one of determining who should be responsible, but rather what they should be responsible to, namely, the education of the individual.

Example: In Biology 101, the TAPS team works in upgrading the course content, where the TAPS team member who is a curriculum specialist is reponsible for the content, and the media specialist has to supervise over the production of the instructional aids. The departmental chairman must approve a budget for this ID program in consultation with and approval from the university authorities. All these tasks are conducive, but not central, to the essential consideration of instruction. Both pragmatists and humanists are neutral in this decision process, but the latter might ask pointedly: "Where do the students come in? While effectiveness and efficiency will be safeguarded in such an arrangement, is there any provision for relevance of the ID product as far as the students are concerned?"

DECISION PROCESS "f" (Function 3: Organize Management):

Establish Lines of Communication

IDI Introduction: Once tasks and responsibilities have been assigned, it becomes apparent that the TAPS team members need to communicate with each other to solve problems that may crop up occasionally: personal differences and animosities, failure to inquire about the availability of resource people, and occasional forgetfulness as to who is to do what. The establishment of a communications network among the ID team members will help to facilitate the procuring of information and transmitting it in various ways. Why, when, what and how of information transmission will have to be spelled out. Some individuals may recommend or suggest solutions, others need to be informed of decisions, and still others must be consulted and their approval secured.

Two decision points may be mentioned here.

f 1: "Which methods of communication (feedback) should be employed among the TAPS team members?"

For the pragmatists, scientific inquiry involves a vast cooperative enterprise within the scientific community in which an issue is not regarded as settled until all intelligent doubt has been cleared and all have come to a common agreement. Consequently, there must be a communication of ideas, doubts, and other information so that objective truth could be achieved, even if this process takes generations of study. If such a search for truth

takes an indefinite timeline, it is much more so with an instructional solution to be sought in a definite timeline where lines of communication must be established. Again, the pragmatists affirm the need for communication without spelling out how this has to be achieved.

Alike the pragmatists, the humanists also do not spell out how lines of communication ought to be established except that this should be done; one does not rid family or state from the sphere of education, because of some of their unwholesome influences in the past on the learner, but "endeavor to make them more and more aware and worthy of their call."[27]

Example: The TAPS team for Biology 101 decides on information feedback to be achieved through items like written memos, meetings, and oral agreements. The decision by the TAPS team to follow a single method or a combination of methods is of little consequence to either pragmatists or humanists; but the latter are more likely to opt for meetings and oral agreements because of the personal interactions these involve than for depersonalized and officious memos.

f 2: "What should be the source of authority in such TAPS team decisions?"

For the pragmatists, the term 'authority' was replete with bad connotations and both Peirce and James excluded at the outset of pragmatic method any reference to authoritative pronouncements and a priori conditions. Should there

be any authority that exacts dispassionate compliance, it is the strict and "diligent inquiry into truth for truth's sake, without any sort of axe to grind."[28] Hence, authority is not vested in a person or persons, but in truth and its sole possession.

Maslow feels that the average person is not conscious of all his needs, but "sophisticated people" can help him to be conscious of his needs. Maritain considers teachers are ministerial agents, while the primary dynamic factor in education is the vital principle in the learner himself. Authority, understood in the limited sense of guiding the learner to understand himself, is welcome, but can never impose itself.

Example: Biology 101 TAPS team gives veto power to departmental chairman over final product, if he so feels. This is unacceptable both to pragmatists and humanists, because the possession of truth is not the sole prerogative of one individual, but it must be sought in the community of scientists who strive to achieve it.

DECISION PROCESS "g" (Function 3: Organize Management):

Specify Project Planning and Control Procedures

IDI Introduction: At this phase of ID activities, the critical step in the organization of management is to establish a broad outline of developmental tasks. Such a provision becomes an effective management tool for the team

because each individual member of the TAPS team has not only sufficient information concerning the tasks and responsibilities expected of each of them, but also the time schedule within which these tasks mut be accomplished, lest serious personnel conflicts and missed assignments ensue. Both human and nonhuman functional factors need to be taken into account in such a setup.

g 1: "Which management techniques should be used to achieve the predetermined solution?" For example, should one use the PERT (Program Evaluation and Review Technique) Method, or the PBBS (Planning, Programming, Budgeting System) Method?"

The pragmatists would welcome management tachniques in the pursuance of an ID solution. Peirce proposes that meaning can be determined through an appeal to the function of thought in producing beliefs or habits of action. Thus, the use of a management technique, i.e., specification of project planning, is a prospective affair in which attention is riveted on the ends at which the idea aims. Purpose comes to function as a principle of selection by indicating what actually counts as part of thought and rejecting all other irrelevant considerations. This appeal to purpose and relevance is basic to pragmatism in all its forms. Without first defining some selective principle or management technique, the process of knowledge would entail theoretically an unending array of logical determinations, but the pragmatic method seeks to arrest such a

total mirroring of everything in thought by delineating a finite situation, i.e., definite timeline, where the possibility of specifying what serves and what does not serve the purpose of thought exists.

The effective management of an ID solution is not unwelcome to the humanists where management techniques seek to combine effectiveness with efficiency. But the central concern for the humanists in all aspects of education is the dignity of the human person. While the humanists agree with the pragmatists in the use of management techniques, they caution against a cult of efficiency which disregards the person.

Example: The ID team assigns 25 days for the completion of course content for Biology 101 and another 35 days for the media forms to be finalized, because it has to plan within budget constraints. If the curriculum specialist requests 45 days (and the media specialist 60 days) to complete the work, this request will have to be overridden. If the request of the curriculum specialist is a genuine one, which, however, cannot be honored, its end product will be a forced one which affects the eventual effectiveness and also the specialist in a dehumanizing way by forcing him or her to work like a machine. This is not acceptable to the humanists. But, if the specific timelines can be met, this decision will be agreeable to humanists.

STAGE II: DEVELOP

DECISION PROCESS "h" (Function 4: Identify Objectives):
State Terminal Performance Objectives

IDI Introduction: The initial thrust and direction provided in the previous steps will now guide the TAPS team to shift its focus from identifying objectives to specifying the methods of instruction and learning. What has been so far vaguely stated, now needs to be spelled out in a concrete form which helps to refine the problem in a more acute and precise manner.

The performance objectives are constituted precisely to identity student or learner performance levels attained at the end of the instruction and to establish measurable goals for individual learners. Hamreus explained behavioral objectives as statements that precisely state what changes in the learner's behavior are expected to occur as a result of the experience provided him/her by the instructional system.[29] It states precisely under what conditions sets of specified tasks must be performed as well as the criteria of acceptable performance.

Two decision points are examined here which are illustrative of the concerns instructional developers have with terminal performance objectives (TPOs).

h 1: "Should behavioral objectives be used as the form for the development of Terminal Performance Objectives?"

For the pragmatists, the method of inquiry is primarily aimed at the meanig of an idea or a proposition which is arrived at through an examination of its practical consequences. From this perspective, the need to state terminal performance objectives behaviorally is in agreement with pragmatism. Since from a cognitive standpoint, the sole purpose of inquiry is to render things intelligible, the verification of observed facts as providing meaning in the inferential phase of inquiry needs to be referred back to the conceivable performance of things to their objectives. Purpose cannot be set forth without something 'general' and the intellectual purport of a concept (and hence, the reality in question) cannot be set in singular effects. Reality or the real covers not only the will be's, the is's, and the have been's (all of which cover actuality), but also the would be's and the can be's. Thus, Peirce was directing attention to what an object would do if it is characterized in a certain way. The meaning of concepts has a clear reference to outcome and the pragmatic idea of conceivable practical consequences refers to the statement of TPOs. But a behavioristic position with a set of should be's summing up the totality of meaning of would be's and can be's falls short of the pragmatist meaning.

For the humanists, the integral unity of human being must be preserved holistically and the prevalent tendency of dividing up man and his acts into a series of artificial

compartments is totally unsatisfactory. "The villain is the atomistic conception of the expert, where he does his thing without reference or tie-in with anyone else and is thus dehumanizing his job, technologizing it," said Maslow.[30] For the humanists, a holistic conception of man and his performances provide the valid criteria rather than an atomistic conception, as represented by behavioral objectives.

Example: The ID team for Biology 101 fixes 100 per cent memory retention of 220 bits of information, a 10-minute oral presentation, and a 1800-word essay on a selected portion of the biology course as behavioral terminal performance objectives. The pragmatists find such determinations as acceptable, but the entire meaning of the biology course would not have been fully realized. The humanists would propose instead, for example, that the 220 bits of information be not learned in an atomistic fashion, but rather be internalized and made relevant to the value structures of the student through which he could consider biological questions as they affect him and his relationships with other human beings.

h 2: "How do we determine acceptable degrees of performance measures?"

The principle of pragmatism as formulated by Peirce stated that to ascertain meaning one should consider the conceivable practical consequences resulting from the truth of that conception and "the sum of these consequences will

constitute the entire meaning of that conception."[31] Thus, a pragmatistic sum of consequences is different from a behavioristically oriented collection of consequences, however comprehensive they purport to be, and the degree of acceptable performance it dictates. For pragmatists, meaning of a reality is more than what is supplied by the TPOs.

For the humanists, the atomistic conception of human beings and their performances has led to a dehumanization that is inherent in every behavioristic determination. Maritain makes a distinction between the "scientific idea" of man and the "philosophical-religious" idea of man; the former, recast by strictly experimental science, has the "distinguished merit of providing invaluable and ever growing information concerning the means and tools of education,"[32] but is divested of any ontological content which the latter necessarily implies. In its concern for observable and measurable data, the scientific idea of man is now reduced to a "phenomenalized idea without reference to ultimate reality."[33]

Example: Biology 101 fixes that the 220 bits of information be memorized with 85 percent retention, the 10-minute oral presentation be rated on a seven-point scale for cohesion of ideas, presentation, voice modulation, etc., and the 1800-word essay be similarly rated for comprehensiveness, originality, documentation, etc. The

pragmatists would accept it with reservations, but the humanists would reject it. They would favor, for example, that the 10-minute oral presentation be not judged solely on the particular skills involved such as voice modulation and presentation, but that the overall content and cohesion of ideas, instead of being retained by sheer rote memorization, reflect how the student has unified and internalized them into his value structures.

DECISION PROCESS "i" (Function 4: Identify Objectives):

State Enabling Objectives and determine relationships between (among) them

IDI Introduction: Once the terminal performance objectives (TPOs) are specified, the question that faces the TAPS team is what is to be taught and in what order. In the first case, the question is, "What knowledge or skills are required of the learner that are a must for the learner in satisfactorily completing the TPOs?" A corollary to this question will be: "In what order should the instruction be arranged so as to effectively achieve the TPO?" What are identified through this process are usually called Enabling Objectives (EOs). At each stage of the instructional activity so defined, enabling objectives specify what increments of skill, knowledge, or affect are essential to enable the learner to successfully take the next stage of learning, which would then produce a pyramidal lattice-work

with the TPO at the apex and the EOs leading downward to the base. When a learner has arrived at the apex, he or she would have successfully completed the TPO.

It should be understood that clearer distinctions cannot be provided at every level of these enabling objectives, at least in some cases. Enabling objectives and TPOs are relevant to each other, but not in an absolute sense; a TPO could be an EO for a higher level TPO.

An ID team might consider the following decision points.

i 1: "How does one determine the relationship between EOs and TPO?"

This question might be seen as a 'logical' sequencing of skills, competencies, and knowledge which are considered prerequisite before a higher order skill, competency, or knowledge could be acquired. The instructional developers usually resort to empirical means of system and task analyses to determine such relationships between EOs and TPO.

For the pragmatists, the behavioristically defined TPO and EOs suffer from their inability to "sum up" all conceivable practical consequences, whereas these are concerned primarily with measurable practical consequences. System and task analyses, despite their exhaustive and meticulous details, often fail to "sum up" all conceivable practical consequences under all kinds of conditions which these task and system analyses, for the sake of economy,

cannot fully and adequately respond to. The pragmatists accept these analyses as efficient instrumentalities, but acknowledge their limitations as well.

Similarly, for the humanists, the atomistic conception of man and his performances is the chief villain. Maslow particularly rejects the so-called Stimulus-Response psychology which has created without meaning to do so, a Stimulus-Response man who is passive, adjusted, shaping, and learning.[34] His hierarchy of need gratificatoins will not hold uniform at all times, and for all kinds of people in the world. Maritain also accepts the viability of such a logical sequencing, but there exist many individual differences, which cannot be adequately subsumed into uniform methods of analyses.

Example: Biology 101 is so structured that weekly quizzes, occasional papers, and mid term exams are related to an effective achievement of mastering the total content and import of the course in the finals. Pragmatists would accept it with reservations; the humanists are not averse to quizzes, papers and exams, but question whether these burden the mind of the learner to such an extent that he is passively receiving information, instead of actively perceiving its logical connection to his life and to the world he lives in.

i 2: "Are the skills and knowledge to be acquired sequentially through the instrumentality of the EOs?"

Peirce speaks about simple explanations taking precedence over more complex solutions in scientific inquiry when he re-echoed the scholastic maxim, "Entia sine necessitate non sunt multiplicanda" (Entities are not to be multiplied without valid reason). Simple explanations can be conceived as building blocks for more complex ones. In this sense, initially acquired information and skills on various levels, can be followed sequentially by more complex skills and information. The process of 'verification' in scientific inquiry imports such levels of understanding and the pragmatists would accept such a decision point.

Notwithstanding serious objections about the atomistic conception of man, Maritain acknowledges various levels in the educational process where the content and direction are attuned to the budding capabilities of the learner. Such a progressive unfolding of knowledge yields to the sovereignty of the child and freeing of the intuitive power. Humanists would accept this decision point.

Example: Thrice every week, the Biology 101 teacher conducts "surprise" quizzes to check whether the students understood preliminary concepts, simple terms and classifications upon which, as building-blocks, more complex course matter could be built up. A general fortnightly quiz will enable the teacher to introduce the students in a sequential manner to more complex course matter. Both pragmatists and humanists would accept such a decision.

DECISION PROCESS "j" (Function 4: Identify Objectives):

Construct Performance Measures

IDI Introduction: Concurrent with determining terminal and enabling objectives is the need to develop measures capable of assessing terminal and enabling performance. It makes no sense to specify objectives without also making provisions for specified ways of measuring these performances which will help the ID team to determine whether the expected behaviors have been successfully acquired by the learners. Hamreus commented: "The primary function of these measures is to determine whether or not the expected behaviors were acquired by the learners as a result of the instruction."[35] Whether the instruments are valid or not is an issue under discussion.

j 1: "What kind of evaluation measures are to be used for each TPO and EO?"

The pragmatic question is "Does it work?" With particular regard to methodology, the pragmatists are right: there can be no more natural way of justifying a method than by establishing that it 'works' with regard to a specific task.

To be justified instrumentally is to be justified in the manner inherently appropriate and adequate to a tool, a method, a technique, a medium, etc. By their very nature, instrumentalities, such as techniques and methods, are means for doing things of a certain sort. An instrumental justification is one given in a manner appropriate to means

as such and is "fitting and proper" with regard to instrumentalities. But this presupposes that this action be accomplished in a purposive and teleological manner. A method is instrinsically purpose-relative: it cannot be thought of as pure and simple, a "method for method's sake," but always as a method for the sake of the realization of some end, so that the teleological question of its effectiveness be always brought to the central issue of instrumental justification.

Humanists, in general, are averse to the employment of performance measures as the sole criterion for assessing educational excellence. It must be noted that the pragmatic criterion ("Does it work?") is not contradicted by the humanist criterion ("Does it work for the good of the human person?") but that the latter is more inclusive than the former. It is integral or integrated development that Maritain insists upon; the needs of both the individual and the person must be respected. Hence, any performance measure that works for the good of the person, but will not work effectively is also a truncated version of education.

Example: The TAPS team specifies criterion-referenced tests for Biology 101. If the instrumentality is fitting and proper, such tests are acceptable to the pragmatists. But the humanists would like that these tests be adapted not only to the course content, but also to the value structures of individual students. These may be provided

through value statements from the students that need not be graded.

j 2: "Who interprets the evaluation data?"

From what was explained in j 1, it is apparent that the pragmatic maxim, "Does it work?", provides justification to the instruments. The designation of an interpeter of evaluation data is only a secondary concern for the pragmatists. However, an evaluation specialist who understands the import of this maxim is more suited for the task than another, for instance, who understands only statistics.

In this regard, the humanists follow the pragmatists for whom such considerations are not significant. Maslow's preference would be for "sophisticated" scientists using "sophisticated techniques."

Example: The TAPS team assigns the evaluation specialist to the task of interpreting the data. Such a decision makes no difference for the pragmatists, but the humanists would wish to control the criteria by which the evaluation specialists would interpret the data.

DECISION PROCESS "k" (Function 5: Specify Methods):

Specify Instructional Strategies and Media

IDI Introduction: The TAPS tem now proceeds to specify instructional strategies and media to help the

learners achieve the objectives the team had established earlier. These specifications describe both the procedures and the materials to be employed.

Since the time the IDI Coordinator's Manual was published in 1972, there have been newer recognitions and fresher insights into the nature of 'strategies' and 'media.' The term 'strategy' is now being broadly understood as consisting of 'expository' strategy (i.e. teaching) in which the course content is expounded as in lecture method, and 'discovery' or inquiry strategy (i.e. learning) in which, through deductive and inductive reasoning, the students are progressively led to understand the course content. The term 'media' can generally be subsumed under tactics or methods, since the term 'media' is particularly restrictive to instructional materials like audiovisual media, whereas 'methods' can be extended to arrangements of the instructional context to facilitate learning.

Besides effectiveness of media and strategies, considerations of efficiency, expressed in time and cost factors are also operative here. A set of activities, deemed appropriate for strategies, will be plotted out which will include plans for evaluation of learning, student practice, and presentation of materials.

There could be a number of decision points.

k 1: "How are instructional strategies and/or media selected?"

It is very evident that the pragmatic method of

inquiry with its concern for conceivable practical consequences makes observation and the instruments of observation a cardinal point in their pragmatist philosophy. Instrumentalities are justified in a pragmatic method to the extent they are appropriate to and validating the scientific inquiry. Hence, instructional strategies and/or media are to be employed to the extent they refer to the pivotal issue of the pragmatists, posed in the question, "Does it work?"

For humanists in general and for Maritain in particular, pedagogical means and methods and their scientific improvement are a matter of pride and an outstanding progress. But the surprising weakness of today's education lies in the failure to bend these means toward their end. The humanistic concern in education is the development of human mind, says Maritain, and ... neither the richest material facilities nor the richest equipment in methods, information, and erudition are the main point. The great thing is the awakening of the inner resources and creativity.[36]

Instructional strategies and/or media may be considered as improving mental faculties, but they must give way to respect for the dawning intellect of man.

Example: The TAPS team specifies a 20-point, itemized, fortnightly quiz, and an 800-word essay which is graded independently by three graduate assistants. The pragmatists accept such a decision as long as they are

instrumental to the purpose at hand. But the humanists would require something more personal in this testing so that the internalization of this information could be gauged; but, they have not indicated how this must be done.

k 2: "Should I consider the comparison between 'expository' strategies in instruction and 'discovery' strategies to be value-free?"

The pragmatist stand on the question of instructional strategies has been clarified earlier. The instrumental justificaton is intimately tied with purposive behavior as the verification phase in scientific inquiry validates it, through instrumentalities, whether these be variously termed as strategies, techniques, media, and methods. As a result, 'expository' strategies and 'discovery' strategies are given equal weight and consideration; the comparison itself is value-neutral.

The humanists, however, view this comparison quite differently. The central issue in education is the development and maturation of human person and a 'discovery' strategy, as exemplified in discovery or inquiry learning, eminently respects human intelligence and the learning process itself becomes a humanistic endeavor. Hence, such a comparison as posed in the above question is not value-free, but very much in line with humanistic thinking.

Example: To teach portions of Biology 101, there is a choice of using lectures alone and of 'discovery learning' strategies where the lecturer is only a ministerial

agent. While the pragmatists would find either strategy equally attractive, the choice for the humanists would be discovery learning.

DECISION PROCESS "1" (Function 5: Specify Methods):

Specify Alternative Methods

IDI Introduction: The specification of alternative methods is motivated by considerations of cost-benefits; an analysis needs to be performed to align the concerns of efficiency with that of effectiveness. Savings in time, cost, and energy expenditure are reflected in this quest for efficiency. Accordingly, there should be provisions in the ID process for determining alternative methods that are judged compatible to the original situation and still capable of achieving the objectives.

1 1: "How do we choose among alternative methods?"

For pragmatists, there is a particular interest in the question of the comparative appraisal of competing or alternative methods for realizing the same set of specified objectives. To the degree we are enabled to examine the projected relevance of a single method, the pragmatists say, we shall be able to weigh the relative justification of rival methods. This comparative analysis is carried on in the direction of the dynamic process of refining or improving a method. If one method emerges as more suited

towards the realization of the instructional goal, this implies the iterative procedure of feedback recycling in the initial stage too. It is rationally tenable that a revision in method or a choice of an alternative method as superior is made on the teleological basis of results and is an actual improvement. The role of the considerations regarding effectiveness and efficiency in realizing the purposive raison d'être of the method is central here. The principal factor in the selection from among alternative methods is the critical rationality in adopting a method as more conducive to goal realization, and the subsequent abandonment of other methods as less conducive.

The humanists have not specifically treated this question of alternative methods, apart from their insistence on retaining the humanistic goals in the specification of methods and materials in instruction. The humanistic assumption, however, would be that alternative methods also are goal-purposive and are selected in the exercise of personal freedom of choice. But the choice should fall on an alternative that is effective; if it has the added attraction of relevance, this would be preferred to another which is merely effective. Further, the students would have the option to choose from among many alternatives because of their preferred ways of learning.

Example: For Biology 101, the TAPS team prescribes that a portion of the course be not presented through a

lecture, but rather by a group discussion, even though both are effective. A list of topics is suggested that would cover the course content. Pragmatists would welcome both alternatives, but the humanists would find the group discussion more attractive.

1 2: "Should the systems concept of equifinality be considered pertinent here in the search for adequate and more suitable methods in an instructional situation?"

The concept, equifinality, expresses the idea that final end result may be reached in a number of ways from various starting points.[37] The fact that all these different pathways would reach the same destination or goal attests to the effectiveness of the methods being considered. Once that is assumed as given, the cost-effective methods of realizing that goal or reaching the destination would indicate which of them could be accepted as the most efficient method. The pragmatist approach subscribes to this systems concept which was treated in b 4.

If fuller human development is the ultimate end, a humanist interpretation of a goal-purposive method with inherent possibilities of efficiency is logical and it is in this sense that Maritain speaks admiringly about "the technical equipment of our industrial civilization."[38]

Example: See the example provided where 1 1 was being considered (above). The group discussion method is attractive to the humanists in comparison with the lecture

method because of its possibilities for enhancing human intelligence and the enrichment to be gathered from human interaction.

DECISION PROCESS "m" (Function 6: Construct Prototypes):

Prepare Comprehensive Description of Instructional Design Specifications

IDI Introduction: Function 6 is concerned with the construction of the prototype to be tested; through its six decision processes this function initiates the process of pulling together specifications and organizing them for production. At this point, development work beings on the instructional content, media and equipment, and instructional sequences are designated. Content is formed into auditory and/or visual messages, formats for each message element are established, each aspect of the content is placed in sequential order, and specific learner activities are introduced. All specifications, examples, and decisions are combined in a comprehensive package so that even an outsider would be able to produce the instructional package, should that be necessary. Such an arrangement enables the ID team to review the progress made so far. The result would be a summary of the problem, objectives, learning domains, and instructional strategies, along with strategy and media specifications, all coherently making up

a kind of blueprint of the plan to be implemented.

There could be a number of decision points in this decision process; two of them are considered.

m 1: "Should this summary plan with description of instructional design specifications allow any deviations?"

If it allows for any deviation, then the presumed comprehensiveness suffers from hidden flaws and the claim for comprehensiveness will seem vacuous. If it does not allow any deviations, then a provision for evaluation specification should have been subsumed under decision process "m" and decision process "n" should have been scrapped. The crux of the problem is imbedded in the "conclusive" certainty with which any proposition might be advanced. Peirce's formulation of "Fallibilism", in its widest sense, affirms that "every proposition which we can be entitled to make about the real world must be an approximate one."[39] The important point is that no assertion about existential facts is completely certain.

For the humanists, there are so many intangibles, including perceptual judgments, enjoyments in 'increased tension' in the Maslowian sense, "intuitive power and poetry" as Maritain explained, which, in the inner dynamism of the human personality, defy precise and comprehensive statements. Humanists argue for the possibility of an "open mind" and free will to be arbiters in decisions such as a comprehensive description of instructional design specification. For them, no comprehensive plan is comprehensive

enough to rule out all possible deviations.

Example: Biology 101 specifies the cognitive doman of undergraduate students to be affected with a course presentation that uses a multiplicity of media and techniques (such as films, slides, TV, discussion, and oral presentations) for one term which should result in the course content being understood with 85 per cent accuracy. However praiseworthy such comprehensive formulations be, for the pragmatists and humanists, these should allow for deviations.

m 2: "How can the blueprint move from the general to the particular?" Specifications are supposedly so clear and comprehensive that even an outsider should be able to draw up a particular prototype based on the blueprint.

Peirce asserts that any experiment cannot be considered as isolated from every other and that any connected series of experiments constitutes a single collective experiment. The pragmatic theory of meaning finds its validation not in a single event, but in the "experimental phenomena" because this particular experiment and its validation is generalizable to future events as well. He does not mean any particular event that did happen to somebody in the past, but what will surely happen to everybody in the future who shall fulfill certain conditions. It is necessary for the ID team to refer back the results of one prototype testing or experiment to future

occurrences under similar conditions. In this sense, the generalized blueprint can be moved to a particular prototype, and the totality of the experimental phenomena can be generalized to future events. "It must be simply the general description of all the experimental phenomena which the assertion of the proposition virtually predicts."[40]

The humanists find fault with this 'blueprint' because it assumes that all the components are interrelated and their actions and reactions are all observable and measurable. Some are, but many are not. Maritain's theory of knowledge affirms that distinctive human faculties such as intellect, will, sense, imagination, "loving" are, indeed, interlinked and they operate in a 'synergistic' manner (Both Maritain and Maslow were fond of this idea) through a deep and nonconscious world of activity, a single root called man. It is man who suffers, not merely his toe.

The failure of contemporary education is in its sole concern with sensory observations, the conscious acts of reasoning, and the deliberate choices of the free will which can be explained in observable terms. Such a thinking is correct, but inadequate; it fails to take notice of other nonconscious acts such as "poetry, love, and human desires." A blueprint particularized in a single event concerns itself with <u>knowledge about</u>, but not with <u>knowledge into</u>; but the latter also is an educational concern. The error of present education is more of an

omission than of commission. Hence, the humanists see such a comprehensive blueprint as a truncated view of education which rejects human values because they cannot be explained away in measurable terms. When the learner is made docile and too passively permeable, even an adult learner ends up being an "intellectual jellyfish."

Example: The comprehensive blueprint for Biology 101 (as examplified in m 1) indeed can be expressed in any instructional prototype. According to pragmatists, the fact that it is a prototype constructed according to specifications laid down in the original blueprint can be had by referring it back to the blueprint itself and the generalizability of the experimental phenomena such a prototype involves. For the humanists, such a blueprint is a flawed one from the start, since it concerns itself with observable phenomena and neglects or sidesteps the consideration of 'nonconscious' and nonobservable, yet eminently human, activities such as love, human desires, imagination, etc. which may synergistically affect the instructional outcome.

DECISION PROCESS "n" (Function 6: Construct Prototypes):

Specify Design for Evaluation of Instructional Materials and Strategies

IDI Introduction: Evaluation may broadly be defined as the examination of certain objects and events, according to certain value standards for the purpose of making

decisions about these objects and events. Such an examination would be conducive to the collection of information regrading the object being evaluated and is related to these value standards.

One of the objectives of evaluation is to demonstrate that the achievements are in tune with the goals and objectives proposed and accepted by the IDI team. It is also necessary to determine what type of evaluation should be initiated since the IDI Coordinator's Manual lists three such types: developmental tryout, validation tryout, and field tryout.

DEVELOPMENTAL TRYOUT assesses the performance of the system during the time of its development itself, so that there is an opportunity to revise the prototype in the light of a number of factors like learner reactions to the instructional materials, use and handling of these materials, and the difficulties in learning the material. This kind of evaluation has long been an integral part of the media field. Today it is known as Formative Evaluation where the objective is to "provide data to those responsible for designing media so that revisions may be made on the basis of tryouts with samples of the target audience."[41]

VALIDATION TRYOUT is concerned with the analysis of evaluation data in the light of the terminal performance objectives to be carried out and the test results obtained

so that no discrepancy between these two be found. This is called Summative Evaluation where those responsible for curricular and instructional planning could be supplied with data so that products can be evaluated on the basis of effectiveness with the intended population.

FIELD TRYOUT is the transferral of the instructional package from the simulated laboratory conditions, where it was developed, to actual field conditions in a test for robustness of the ID product.

n 1: "Should evaluation be concerned solely with test results and achievements that are observable and measurable?"

For pragmatists, scientific inquiry must yield conclusions that are verifiable by observation, experiment, or both. Theoretical elaborations must yield to experiential results. In 'real' experimentation, nonhuman entities, such as objects and processes of the perceptible world, are manipulated to force nature to answer questions. Facts of observation provide the material for knowledge which the intellect feeds upon. But it is one thing to affirm the importance of observation and experiment, and quite another to know in detail what that affirmation really entails. The epistemological problems connected with experimentation and observation are notoriously difficult and Peirce has not provided any systematic analysis of its validation. So, the pragmatists theoretically affirm observable phenomena

involved in evaluation, but there are no conclusive statements about it.

For the humanists, Maritain sees that the tragedy of contemporary education lies in its concentrated attention in the training of the individual, while the awakening of the person is virtually neglected. The various tests, researches, measurements, analyses and statistical comparisons that educators are constantly putting forward, no doubt, have their value, but they can really present only what emerges from the human being in the realm of sense observation.[42] This is not to deny the inherent value of the specific design for evaluation in the instructional setting, but to point out that such decisions in the education of individuals be made subordinate to the education of the human persons.

Example: The effectiveness of Biology 101 will depend upon the extent to which the students will internalize the information, skills, attitudinal and affective content of this course, as set forth in the course objectives. Since internal changes effected in the student will validate the course objectives, it is necessary to set up a design for evaluation which may take the form of final examinations, midterms, quizzes, papers, etc. Such a decision is agreeable to pragmatists; the humanists, though they will accept it as valuable, will still seek to find an evaluation which will make them become better human beings as a result of this course.

n 2: "In a developmental tryout, how are the data collected referred to evaluation?"

This point refers to the instrumental justification of methods and techniques explained in decision point j 2. An evaluative method is purpose-relative and in the developmental tryout the purpose is to assess the system's performance and improve it, if necessary.

In experimental manipulations, the data collected may contain 'rational' reactions of the human subjects--rational, in the sense that these human subjects reacted in a nature and manner that are appropriate to the essential constituent of rationality that they are endowed with. The educational context, in which they allow themselves to be placed, is distinct and set apart from an "animal training session" when stimuli are responded to in controlled patterns. The relevance and impact of legislations concerning experimentation involving human subjects cannot be minimized. The pragmatic concern for the dignity of human subjects in scientific inquiry is evident in the manner in which Peirce rejects the three methods of 'fixing' belief--method of tenacity, method of authority, and method of a priori conditions--in favor of the scientific method. The man who adopts the method of tenacity will find that "other men think differently from him, and it will be apt to occur to him, in some saner moment, that their opinions are quite as good as his own."[43] There is a possibility of change in opinion, when confronted with the rationality of other

arguments. Peirce reserves strong and harsh words for the method of authoriy in enforcing compliance and making of human beings "intellectual slaves." "When complete agreement could not otherwise be reached, a general massacre of all who have not thought in a certain way has paved a very effective means of settling opinion in a country."[44] Hence, the pragmatist stand affirms that data collection from human subjects cannot be referred to any evaluation without underscoring the humanistic concerns underlying these data.

If pragmatists are found to be so strong in vindicating humanistic concerns, it may only be imagined the paramount concern of the humanists in this regard, especially as it related to human subjects legislation. The legislation brings to fore the critical relevance of evaluating evaluation designs and the myopic attitude, in the past, of the designers of performance measurements and evaluations in manipulating human subjects, all in the name of science.

So, according to humanists, in a developmental tryout (or formative evaluation), the data collected from human subjects need to be referred to evaluation in a manner worthy of their human dignity.

Example: In the tryout of a 24-minute film for Biology 101, it is found that some of the students slept through it, one was totally disinterested because of a high fever, and three were emotionally upset because the film

showed the clubbing of baby seals. Both pragmatists and humanists maintain that data referred to evaluation should uphold humanistic concerns, in this case, the emotional outbursts and the disinterestedness of the students.

DECISION PROCESS "o" (Function 6: Construct Prototypes):

Conduct Technical Review of Instructional and Evaluation Design

IDI Introduction: Even if the ID team has done a creditable job so far, this step provides a summary review of the decisions reached along with reasons and aims of such efforts. Presumably, all major components in the ID process have been identified and their interactions specified by the ID team, but individuals may be found who might possess unique insights into what might turn out to be critical faults that substantially affect the ID product. As was done in previous decision points or processes, the present decision process incorporates features of an interface analysis through the identificaiton, interpretation, and prioritization of essential points of contact among system and subsystem boundaries.[45] The appropriate operation of all system components requires an exchange of essential information and this must be detailed so that identification of potential flaws can be detected.

A technical review of instructional and evaluation

design as specified in "o" is definitely a process that goes back to all previous decision processes in a detailed fashion. The decision points could be numerous; their number has been conservatively estimated at more than 100, according to the explanation given in the IDI Coordinator's Manual.[46] One might start with questioning its necessity.

o 1: "Should one conduct a technical review of instructional and evaluation design?"

The pragmatists' view of the scientific inquiry has been explained in sufficient detail and their stand on the decision processes indicates a fair amount of agreement with the ID decision making process. In some instances, specific decision points were not considered by the pragmatists. It could be said that this process under study is implicitly acknowledged and accepted as congruent with the position of the pragmatists.

As for the humanists, to orchestrate the various components of instruction and evaluation in the ID process in such a technical and comprehensive manner that potential loopholes are plugged and instruction itself becomes completely structured is a concept that goes counter to the humanist view about human intelligence. Education should be aimed at the liberation of human intelligence where the person, in freedom of will, strives to achieve maturity and integral development, said Maritain, and "what is learned should never be passively or mechanically received, as dead

information which weighs down and dulls the mind."[47] Wherever it is not actively transformed by understanding into the very life of mind, instruction itself turns out to be a "big mass of damp wood thrown into the fire only to put out" the ardour of the questing mind. Maritain vehemently rejects any attempt at manipulating intelligence because reason which receives knowledge in a servile manner does not really know and is only depressed.

Example: The solution proposed by the TAPS team for Bioloy 101 would include, presumably, the following decisions: 1) that the course be presented by Dr. Smith with assistance from two graduate assistants; 2) the course effectiveness be determined by a 85 per cent mastery of the biology concepts by two-thirds of the class, a 90 per cent mastery in group discussion skills, and 75 per cent mastery in oral presentation skills; 3) these skills and competencies be gauged by 18 ungraded 'surprise' quizzes, five fortnightly quizzes which are graded, three term papers, one oral presentation, one midterm and one final examination; 4) that grades be awarded according to predetermined ratios and percentages; and 5) a 75 per cent class attendance be considered mandatory.

This summarized technical review could be detailed further, but it is sufficient to note that such a detailed prescription would be accepted by the pragmatists; the humanists, however, would consider it as "dehumanizing,"

because it shackles the human spirit, instead of liberating it.

DECISION PROCESS "p" (Function 6: Construct Prototypes):

Specify Procedures for Collection and Development of Instructional Materials

IDI Introduction: The purpose of this decision process is to ensure that procedures for collecting, developing, and purchasing instructional materials be clearly outlined. The new product may result from existing materials with minor modifications or major overhauls; the various components may individually be purchased and assembled together or they may have to be substantially built up anew. Hence, it is necessary that the designs for the materials to be developed and methods for collecting, collating, and cataloguing materials be determined.

This step provides for such processes by detailing procedures for the purchase, payment of materials, identification of sources that could provide the needed materials, arrangements for commercial production if they are so needed, and the overall activities for such production and development.

p 1: "Should the ID product the prepared through minor modifications of existing materials?"

For the pragmatists, the overriding concern in instituting the use of particular instruments in scientific

inquiry is its instrumental justification; whatever may be considered relevant and appropriate to the purposive dynamism of inquiry is instrumentally justified. It does not matter if the ID product is adapted from existing materials as long as the product, in its new form, is fittingly relevant to the goals of inquiry. Further, from the perspective of efficiency, this may be cost-effective as well.

A controversy that has been raging for a long time is the issue of commercial vs. local production of ID materials. Technology in education has made considerable inroads into the burgeoning educational industry with a mass-produced, stereotyped, innovative and profitable array of instructional aids. Commercial enterprises thrive through a marketing strategy of launching small-sized instructional systems that could be combined with other units to produce a complete and larger system. Vying to gain a foothold in the educational industry are the locally produced instructional materials which are better tailored to meet the local educational needs. Effectiveness, in such instances, is the main pragmatic concern and the locally produced units may be more capable of meeting that requirement. But efficiency, in terms of lower cost per unit offered by larger commercial firms, may clinch the issue, but from a pragmatic standpoint, effectiveness comes first, and then efficiency.

When the humanists acknowledge the validity and

usefulness of educational materials, they too follow the pragmatic path. The relevance of locally produced materials which are designed for a specific audience also carries a humanistic import in its respect for learner characteristics.

Example: An existing 14-minute slide/tape program is altered with additional slides and text for Biology 101. Given the conditions mentioned above, both pragmatists and humanists would be in agreement with such a decision.

p 2: "Should the ID project be constructed anew through local production of various components?"

This consideration is an extension of what was discussed above. The pragmatist stand in this respect is very clear. A cost-benefit analysis may persuade a slight alteration of existing materials and adapting it instead of a totally new product, if both solutions (i.e. products) are found to be equally effective.

The humanists embrace the pragmatic viewpoint with the condition that humanist goals be safeguarded.

Example: The ID team allots funds for the production of a new 20-minute videotape for Biology 101. If this solution is equally effective as an inexpensive slide/tape program, both humanists and pragmatists would opt for the slide/tape program.

DECISION PROCESS "q" (Function 6: Construct Prototypes): Construct and Assemble Instructional Materials

IDI Introduction: Up to this point, all instruciton-al materials, with the exception of commercially acquired materials, are still in blueprint form. Now begin the efforts at converting this paper design into actual usable materials. It is also necessary at this stage that all personnel be cognizant of the specification of the standards in production so that each individual component can fit in smoothly with the overall product according to the formats previously established. These standards may extend to ID materials such as size of films (35 mm or 16 mm), audio recordings (2-track or 4-track), stylebooks, and printing manuals. Considerations of improved quality in design, product, and performance as well as attractive packaging of the ID product are discussed and agreed upon at this decision process.

q 1: "Should the ID team construct a computer-assisted instructional (CAI) product for the sake of efficiency, rather than an individually prescribed instructional (IPI) product?"

The question for pragmatists is one of instrumental justification in scientific inquiry. The verification phase in inquiry imports two activities: (1) 'action' or modifi-cation of objects by the experimenter, and (2) a subsequent 'reaction' in which the objects that are acted upon induce perception on the experimenter and his eventual recognition

of what it teaches him. Assembly of instructional materials belongs to the 'action' phase where the process is a series of purposive steps that are situated in the experimental phenomena of inquiry. As long as modification of objects can be achieved equally through both instrumentalities, the claim of the pre-eminence of one solution (i.e. CAI) over another (i.e. IPI) is merely a "verbal quibbling."

For the humanists, this is a vital consideration. First and foremost, the supremacy of ends over means must be vindicated at all costs. Instrumentalities or instructional materials should never be allowed to dominate the human being. Subsequently, instrumental effectiveness and efficiency will have to be made subservient to the dignity of human nature.

Example: If Biology 101 makes use of an IPI program, this will be preferred by the humanists to a CAI program, even if the latter is both efficient and effective. The reason is that CAI presumably does not provide for human interaction in instruction. Similarly a lecture method coupled with group discussion providing for student interaction, will be preferred to a TV class without interaction. One might think of similar situations and media, but the predominant concern here is that of vindicating the human dignity in education, whereas the pragmatists would be least interested in the preference for an efficient medium as along as effectiveness is reassured.

q 2: "Should the production quality of nonprint media be aimed at higher or more refined tastes?"

For the pragmatists, the instrumental justification of a solution or product lies in its effectiveness to achieve the intended purpose. To the extent improved quality and refinement of ID products could be shown as inhering to and affecting the effective outcome of the ID product, considerations of quality control would be vital to scientific inquiry. Other adjunct considerations might be welcome, but they do not radically alter instrumental justification.

For the humanists, the effectiveness of ID solutions need to be coupled with humanistic concerns as well. Since improvements in quality or a concern for quality control are usually aimed at sensory gratifications which, in turn, could lead to higher need gratifications, to strive for quality productions, either in print or nonprint media, could be considered a humanistic concern.

Example: An audio recording for Biology 101 program needs to be taped. The question is one of employing an amateur narrator or a professional and the humanists would opt for the professional narrator, if other considerations such as payment and availability do not far outweigh this choice. For pragmatists such a consideration is not significant, unless it could be shown that the employment of an amateur would cut into program effectiveness.

DECISION PROCESS "r" (Function 6: Construct Prototypes):

Specify Procedures to be Used by Personnel During Tryout of Instructional Prototype

IDI Introduction: Though the TAPS team may be aware of the standards to be used in the production of the prototype as well as in its use, it is necessary to clarify these procedures for the personnel who will be actually involved in tryouts at various times. Uniform standards that are clearly set at this stage will enable the personnel to carry out the plan as designed and the data collection will be adequate. Use of incorrect procedures may result in faults in the instructional system or even bias data collection to such an extent that evaluation efforts may be thwarted.

Two decision points may be considered.

r 1: "How should a product validation in this developmental stage affect instructional effectiveness?"

For the pragmatists, this is a corollary to the steps mentioned before. Specification of procedures pertain to proven efficiency which, if consciously adhered to, will spell success in the instructional enterprise. This is not intended to be an ironclad insistence for the sake of a smooth functioning, but deficiencies resulting from non-adherence may adversely affect not only efficiency, but also effectiveness. For pragmatists, the use of instruments in scientific inquiry is of great importance since sensory

data need to be provided which can be transformed "by the machinery of mind."

For humanists, the specification of procedures in product validation is not of major consequence, nor have they directly dealt with this question. The possibility of incorrect procedures vitally affecting instructional effectiveness is probably real, but humanists are concerned that achievement of effectiveness and efficiency is not marred by a conscious neglect of the person. A detailed description of procedures to be strictly adhered to may give the impression of "animal training" which offends against human dignity.

Example: Specified procedures in teaching Biology 101 may assume the following: room to be darkened before film projection, students are not to glance at workbooks till the instructor tells them to proceed, a task assigned to the class to be completed in eight minutes, students are not to speak with each other before debriefing is completed, etc. All these procedures are efficient steps, but the humanists will question their advisability; they may even term them as animal training exercises. Overall consideration: pragmatists would accept this decision, but the humanists would accept it with some reservation.

r 2: "Should it be expected that each tryout would be under similar conditions as at the first time?"

The IDI Coordinator's Manual specifically mentions that procedures will have to be specified for EVERY

tryout.[48] Thus, it becomes apparent that the specification of procedures is intended for a single occurrence only, which cannot be replicated. Pragmatic theory of meaning asserts that meaning be sought in the experimental phenomena that contains generalizability "across the board" under similar conditions. A one-time experiment cannot be dignified with the term of a "method." Hence, the pragmatists would say that a one-time method is no method at all.

Humanists have not tackled this question. But from the humanistic viewpoint, the uniqueness of individual persons argues for different situations every time a tryout is initiated.

Example: A detailed specification is given for the first product tryout for Biology 101 in Casey Hall for 25 students. A week later, another tryout is planned in Menezes Hall in Southwestern U. for 60 students. The ID team member who is in charge of this second tryout wants to carry a xerox copy of the first tryout to Menezes Hall.

Pragmatists would accept such a decision. The humanists, most likely, not. The reason for the unwillingness to apply the same set of procedures evidences a respect for different learner characteristics.

STAGE III: EVALUATE

DECISION PROCESS "s" (Function 7: Test Prototypes):

Carry out Instruction as Planned

IDI Introduction: This is the first step in the EVALUATION stage. With the technical and editorial requirements having been satisfied, this empirical tryout of the completed prototype is conducted in a representative sample of students of the target population. All the pertinent elements of the prototype system must be engaged, which will enable the ID team, at a later stage, to prove the total system in actual field conditions. What should obviously result is either the implementation of the system in its current form, or, more likely, revision and recycling with necessary modification. The instructional procedures explained in 'Function 6: Construct Prototypes' are in full force at this time. When specifications and standards are closely followed, observation of the negative or positive feedback from the sample of learners becomes possible.

s 1: "What does the test of prototypes hope to achieve?"

In this paper, "What Pragmatism Is?"[49], Peirce portrays a questioner who voices suspicion on the claims of pragmatism: "Can an experiment, in itself, reveal anything more than that something once happened to an individual object and that, subsequently, some other single event has

occurred?"[50] An experiment, Peirce answers, is not an isolated event because rational meaning cannot be derived from a single event. A pragmatist seeks meaning not from a particular event that did happen to somebody in the past, but what will surely happen to everybody in the future who shall fulfill certain conditions. So meaning has to be sought, not in any particular event, but in the 'experimental phenomena' which are generalizable to future events as well. It is generalizability in experiment that pragmatism looks for. This idea is in agreement with the ID decision making process since the ID team cannot rest content after having tested one experimental prototype, but they should be able to generalize its finding to future occurrences under similar conditions.

The humanists have not treated this question specifically, but Maritain, in his Introduction to Philosophy,[51] speaks about generalizability as one of the characteristics of experimental undertakings.

Example: The completed ID product on Biology 101 is presented to a sample of students to assess its effectiveness. As a prototype, it is the first in a series of similar experiments whose findings can be generalized to future events. Both pragmatists and humanists are in agreement here.

s 2: "Should the students be oriented to what is going to happen?"

Scientific inquiry, for pragmatists, is a dispassionate search for objective truth. A distinguishing characteristic of science is its realistic foundation; it starts with the hypothesis that there exists, prior to and apart from the investigating scientist, an objective order of nature. By opting for the scientific method of inquiry to "fix" beliefs, Peirce rejects the sophisticated method of metaphysicians because they entertain subjective beliefs or propositions as a starting point and interpret facts to fit into their pet schemas, e.g. Plato and Descartes. If, on the contrary, science is a persistent and disinterested pursuit of truth, any condition that may vitiate the efforts to discover truth should be conscientiously avoided. Hence, the pragmatists may not be inclined to divulge to the students the true purpose of the testing if such a prior knowledge might affect the findings.

The critical consideration in humanistic education is that it be holistic, and not fragmented into a study of facts alone. This is not intended to be a plea against detailed work; in fact, "every clash of broad issue eventually works itself down to small crucial experiments and these experiments ought to be done as well and as carefully as we know who."[52] From this perspective, it seems that Maslow follows the pragmatist tradition. But, in any event, a debriefing is necessarily called for lest the experiment degenerate into any 'animal training' exercises.

Example: The ID product for Biology 101 is presented

before a representative sample of undergraduates under specified conditions. Usually a pre-test is administered before the instruction and, after it, a post-test. After the post-test, the humanists will insist upon a debriefing, as a right, whereas the pragmatists may expect it.

DECISION PROCESS "t" (Function 7: Test Prototypes):

Carry Out Evaluation as Planned

IDI Introduction: The crux of the prototype testing is its evaluation. The TAPS team cannot perform a tryout without collecting some data which would provide information necessary to determine whether the learners have achieved the objectives set at the outset of the process, and revise the instructional materials as well as the evaluation materials, if so warranted. Evaluation may be defined as the process of examining certain objects and events in view of specified value standards for the purpose of making corrective or adaptive decisions.[53] Necessary information will have to be made available to decision makers; they, in turn, will assess its congruence with the specific values they hold and decide to improve the quality of the ID product. Normally, operational definitions for the behavior are employed, but problems of adequacy and relevance usually arise when the indicators of prescribed behaviors are inadequate.

A decision point may be considered here.

t 1: "What is an acceptable rationale for evaluation?"

The proper test for the appropriateness of any methodology is posed by the pragmatist question whether the test reveals that the intended purposes have been realized. Since instrumentalities, as explained before, are invariably purposive, it can be properly validated in terms of its ability to achieve the purposes at issue--its success at accomplishing its intended task.

So 'success' is the whetstone for the rational evaluation of methods and instrumentalities. The proper test of a method lies in its capacity to realize effectively and efficiently the sort of product that constitutes its teleological raison d'être. The justification of a method resides in an instrumental analysis that determines its suitability to the task at issue. The issue that is pivotal in assessing whether the prototype actually works in practice is a 'pragmatic' one. The rational legitimation of a prototype or method is not at all one that devolves upon theoretical considerations of abstract principles, but one that is eminently practical.

Humanists raise serious questions concerning the validity of conclusions drawn from data which are determined by researchers, as opposed to the conclusions by nonresearchers. Guba examined this phenomenon of gaps and concluded that (a) researchers locked themselves into a

fixed conceptual scheme of dependent variables, observational procedures, and instrumentation, and (b) remained inattentive to the insights of non-researchers gained by long experience and continuous observation in reality situations.[54] This was seen as a difference in value structures espoused by researchers and non-researchers. Humanists, like Maslow, reject this excessive preoccupation with "identifying science with exactness, precision, with quantifications, with precisely defined variables and with good control of all these variables,"[55] and insisted that humanistic values also be taken into consideration.

Any value theory is important because it specifies a correspondence between preferences among values and preferences in corresponding behavior situations. "To say that a person 'has a value' is to say that he has an enduring belief that a specified mode of conduct or end-state existence is personally and socially preferable to alternative modes of conduct or end-states in existence."[56] Humanists contend that any evaluation in educational problems should not be restricted to the narrow limits of behavioristically defined operational definitions, but be holistically extended to view the human person in an organismic context.

In a similar vein, Maritain argues that the whole person be taken into consideration in any evaluative examination. Does the liberation of mind mean that what essentially matters is not the possession of knowledge, but

only the development of strength, skill, and accuracy of mental powers, whatever the thing to be learned may be? In this dichotomy between knowledge-value and training-value, Maritain affirms that it is not by the gymnastics of its faculties, but rather by truth that human mind is set free.[57]

Example: The post-test data and attitudinal questionnaires administered to the sample audience for Biology 101 will provide the ID team with enough material that could be subjected to an evaluative study. In the first place, this evaluation will have to determine the effectiveness of the instruction; secondly, the matter of efficiency will have to be made clear. Both these points will find backers in the pragmatist and humanist camps. As regards the relevance of the course, there may be disagreements stemming from the humanist camp.

DECISION PROCESS "u" (Function 7: Test Prototypes):

Tabulate and Process Evaluation Data

IDI Introduction: If carried out properly, this decision process is a natural activity in the chain of events that started with the determination of appropriate tryout behaviors prescribed earlier and then carried out in the tryout. The task now is to arrange systematically and summarize the data in a form suitable for interpretation. Assisting the TAPS team would be an evaluation specialist

whose expertise in the interpretation of results would become necessary. Once the data reduction procedures have been accomplished, then the question is whether any procedures need to be changed in lieu of future tryouts. Also, it must be determined whether the procedures are clear as to the methods of reducing these data from each instrument such as grouping similar comments, tallying frequency of test scores, computing percentages, and calculating means and standard deviation of scores.

u 1: "Are statistical comparisons a necessary part of evaluation?"

For the pragmatists, the instrumental justification of a method or prototype is inevitably in general, and, as it were, statistical in its bearing. If a method were applied just once and was 'proven' to be successful, this does not affirm anything beyond this particular instance. The so-called success of the prototype testing may have come gratuitously through a mixture of events and circumstances, through accident, 'luck', or some other unrecognized special feature of a particular case. If a prototype is to be validly accepted for successive applications, it must be capable of producing a determinate result when the necessary conditions have been met.

Maslow, among the humanists, remarks that psychology be more problem-centered and less absorbed with means and methods. If the insistence is only on elegant techniques,

"scientific" exactness, and questions of validity, then much cannot be hoped to be accomplished. It is a senseless game or ritual if science is defined primarily as a method. "If pertinence, worth, goal, value are underscored, and validity and reliability exclusively sought for, this is very much like boasting, 'I do not know or care what I am doing, but see how accurately I'm doing it."[58] To the concerns of efficacy and efficiency, the humanists add another important dimension: pertinence or relevance. Mere empirical considerations will not help determine the relevance of an instructional product, which has to be sought in a unified conception of the whole human being. As Maritain mentioned, one could teach somebody to be a 'good' pickpocket, but if he is not taught to be a 'good' man, then education would have failed. A central emphasis of Maslow's humanistically oriented research is to describe the entire personality--not only all its facts, but the holistic flavor of the integration of these parts.[59] It is this synergistic dimension which, according to Maritain and Maslow, is found wanting in behavioral researches.

Example: If the post-test data and other questionnaires and attitudinal measurements taken at the end of the course in Biology 101 are tabulated and processed, these might indicate that the students obtained 85 per cent or more marks in the post-test and that they have a positive attitude toward the ID product. This decision is a sound

pragmatist practice, but the question of its relevance to the students will come under heavy fire from the humanists.

u 2: "Should the analysis of results be conducted only of those that are precisely stated and measured?"

James was suspicious of an analysis of experience where the clear-cut and precise are taken to be basic or the 'first.' Clarity and precision are the results of analysis or 'reflected products' and, however legitimate one would presume them to be, they are not to be thought of as basic. Experiencing is initially an affair of vagueness with its 'fringes' extending beyond the directly noticed and focused content. Whatever is experienced comes with associates and connections, not just its focal points. Hence, tabulation of results should not be viewed in an atomistic fashion as clear-cut and precise components and relations, but rather 'experientially' in an integrative whole. Peirce also pointed out that one "sets out" in medias res, in the sense that the actual thinker approaches a task already laden with a body of previous experiments and not, as the empiricists would advocate, with first percepts.[60]

Like James, the humanists also underscore the experiential validation of scientific inquiries where facts are not viewed analytically, but holistically and integrally. Research is best conducted under naturalistic conditions with a minimum of subject manipulations; the emphasis is

upon complete data collection and the establishment of close relationships between the experimenter and the subject. Such a humanistic conviction is contrary to strictly defined objectivity which requires total experimental control. If the humanists suggest revisions, this persuasion will be mainly due to incomplete data collection rather than through the failure of analytical interpretation of data to validate the findings.

Example: In a group discussion as part of the Biology 101 prototype testing, eight small groups, each consisting of five students, are formed. Three groups, under three ID members as monitors, recorded their attitudes on ten topics on a 7-point Likert scale; three groups could finish only six to eight topics thus listed; in two groups, the first topic generated a heated discussion and they did not continue beyond the first listed topic. The ID team decides to accept the findings from the first six groups.

Such a decision for the humanists would be tantamount to atomistic consideration of results. It is possible that the ID monitors may have pressured the first three groups to hasten to conclusions which may have adversely influenced the free flow of views and information. The pragmatists would side with the humanists in this respect.

DECISION PROCESS "v" (Function 8: Analyze Results):

Determine Relationships Between Results, Methods, Objectives, and Goals

IDI Introduction: With the test data procured, it is the responsibility of the TAPS team to interpret the data. Pre-determined data analysis procedures now must be followed closely in order to establish any kind of relationship between the methods planned and the methods observed during the tryout period. The quality of any revision to be incorporated will, to a large extent, depend upon the ability of the ID team to analyze and interpret the test data. A number of questions are likely to be raised: does the evaluation indicate whether the learner did what was expected of him or her, was the teaching strategy adequate, were the interfacings of various elements functional, etc. The comparative analysis initiated at this step will have to provide the answer not only with regard to the success or failure of the ID product, but also related questions such as why it happened so, and to what degree.

There could be a number of decision points that could be raised here. In the place of many such decision points that deal with the agreement or disagreement of the pragmatists and humanists, one decision point is being pursued here which is rather comprehensive in its treatment of the major concerns here.

v 1: "Will objective truth be the result, once the relationships between methods planned and observed are

determined?"

The triad of doubt, inquiry, and belief forms the background of Peirce's well-known claim that the "sole object of inquiry is the settlement of opinion."[61] But it is not mere opinion that is wanted, but a true opinion. This is an ideal, but Peirce could not accept it as the correct procedure of what actually happens in a larger number of cases regarding the determination of relationships between goals and the instrumentalities used thereby. When a firm or resolute belief is finally reached, we are satisfied, whether the belief be actually false or true, because the doubt or irritation that initiated the inquiry has been appeased by "a belief that we shall think to be true."[62] Peirce was not asserting that the actual believing has anything to do with the establishment of the truth of the belief, but rather that, in the absence of real doubt based on solid grounds for supposing that the belief might be false, inquiry ceases to progress further; it is arrested and the belief thus reached is presumed to be true. To the extent that no actual doubt is entertained, the belief remains firm, even though the open-ended character of inquiry can potentially entertain new claimants for truth.

Both Peirce and James, thus, accurately represented what usually takes place in a majority of situations involving this triad of doubt, inquiry, and belief. Once a

belief is held firm as a satisfactorily true explanation, it will not only drive out rival claimants vying as the true solution, it will even stand in the way of looking for another possible explanation. After the test of prototypes, the 'conclusive' determination about the 'true' relationship between goals on the one hand, and results, methods, and objectives, on the other hand, is potentially amenable to revision, but the more firm a belief, the more unlikely it is to search for another solution.

HUMANISTS: The basic stance of humanists toward evaluation has been mentioned earlier in Decision Process "u". Extensive data collection, whether this be through numerous questionnaires, interviews, fantasy tests, performance tasks and behavioral ratings in attempting a description of the motivations of subjects, distinguishes Maslow's research efforts. Maslow who considered himself "as a scientist rather than an essayist or philosopher," felt himself very bound to and by the facts that he was trying to perceive, not to create.[63] There is a need for a science, he said, with a far wider jurisdiction than it now has when it tries to be value-neutral and value-free. Values cannot be left to be decided by nonempirical people on nonfactual grounds, but it can be achieved simply "by enlarging our conception of objectivity to include not only spectator knowledge, but also our experiential knowledge."[64]

Example: The interpretation of the post-test data, after the prototye for Biology 101 was tested, leads to a comparison of what was originally intended (student mastery of the course content by 85 per cent, interest and enthusiasm for the course) and what was actually obtained (mastery of about 80 per cent, relatively high interest and enthusiasm for the new biology course as evidenced by attitudinal questionnaires, etc.). According to pragmatists, objective truth may not have been reached, but, in the absence of any serious doubt to the contrary, this truth will hold. Apart from these test results, the humanists would seek for other indications such as interest for other courses as well, greater interactions among students, tolerance for divergent opinions of other students.

DECISION PROCESS "w" (Function 9: Implement/Recycle):

Indicate What Kind of Revision, if any, Are Suggested by the Interpretation of Results

IDI Introduction: Certain revisions may often be suggested by the interpretation of the data. These may be minor, and possibily not worth the effort to change. They may also be crucial and substantial revisions which the TAPS team will have to make. These revisions may be related to the prototype itself, the evaluation design and procedures, or the collection of more data than what was

planned, when things did not go as well as expected. If everything turned out satisfactorily, then the question would be whether to revise the prototype materials further, or to implement it without any revision; it may further ask that any revision be temporarily shelved, pending further evaluations.

w 1: "Can absolute certainty be the outcome of an ID prototype testing?"

Logic, as exemplified in scientific inquiry, and ethics, concerned with conduct, both look forward to action and conduct. Pragmatism teaches that "what we think is to be interpreted in terms of what we are prepared to do."[65] But absolute certainty concerning the truth of our hypotheses cannot be attained at any given moment by any given individual. At the same time, there can be an unending approximation to it through the continuing community of observers by means of repeated verifications. Peirce makes a sharp distinction between science, with its attitude toward facts as merely the vehicle of eternal truths, and practice, which needs something to go on. Science is a purely theoretical affair and, when unencumbered by the need to solve essentially engineering problems, has "all the time in the world" to pursue its ends.[66] Practice, on the other hand, aims at objective truth or the closest approximation of it, because practice cannot wait till everything is known; one must decide, here and now, what to do. Thus, an approximation to an ideal solution is the

closest result one might expect from the testing of prototypes, and revision of previous positions and methods is a necessity.

For the humanists, there could be no absolute certainty in any of the intellectual enterprises of man, because the teleological dynamism inherent in human activities, surges ever forward, taking momentary respites in low level homeostatic equilibrium. For Maritain, a well-grounded Thomist, absolute certainty implies infinite intelligence that not only apprehends realities, but also comprehends them in their immeasurable totality--a task a finite intellect, fallen from grace, can never hope to perform, as long as man stands rooted in his individuation.

Example: The post-test data indicate that in the prototype testing, every one of the students had perfect scores. Does this mean that the new ID product for Biology 101 is an instructional panacea? No, the course may have succeeded in meeting all the content and informaton requirements as specified for the course. But what Biology 101 really imports in all its ecological, economical, sociological and other implications may only be partially grasped. It is in this sense that pragmatists and humanists would assert there could be no absolute certainty.

DECISION PROCESS "x" (Function 9: Implement/Recycle):

Determine if Suggested Revisions Indicate that the instructional Prototype be Recycled or if the Prototype can be Implemented without Revision

IDI Introduction: If the obtained results indicate the desirability of revisions, the TAPS team will now have to determine whether to implement the ID package or recycle it. If it is to be implemented, then, it must be asked whether minor revisions are to be made and what should constitute the next steps for a smoother implementation of the ID package. If the decision is for recycling, the question that faces the TAPS team is one of determining from which of the nine functions such a recycling needs to be started and a clear enunciation of the reason leading up to such a decision. They will also discuss the next step.

When the corrective iteration of the recycling step has been completed or when the decision by the TAPS team has been reached to implement the final ID product, the instructional system is ready for being launched into the real educational world.

x 1: "Are approximations to reality all that we can hope for? What is the critical factor that provides stability to any ID product that is implemented?"

It was Peirce's thesis that inquiry can never yield results that are completely certain, exact, necessary or universal. Such a stand originates from two points: (1) the

acquisition of a new belief, called 'thought at rest,' involves further doubt and further thought, because belief is a rule for action; (2) there is an element of vagueness in the very nature of observation, because "no cognition and no sign is absolutely precise, not even a percept."[67] It is always possible to come up with further refinements in methods of empirical discrimination. When one generalizes on the basis of a limited number of observations, one inevitably stumbles into the region of the uncertain and the probable. This observation led Peirce to state that "no man of self-respect ever now states his result without fixing to it its probable error."[68] But, Peirce was also concerned with the question of stability: can there be a final stabilization as the evolutionary process of methodological development ultimately attains an essentialy 'steady state'? If there could be a methodological stability over a long period of time, this would provide the effective mark of efficacy and adequacy, furnishing an indication that we are, in fact, doing as well as the operative conditions of the case admit of. Stability over a long period of time can help establish a theoretical justification of the methodological instrumentalities in hand.

Thus the pragmatists would assert that a stability over a long period of time among the members of a scientific community would provide the critical factor for the decision to implement an ID product.

Among the humanists, Maslow considered the hierarchy of needs to be a developmental continuum, starting with the most basic psychological needs and progressing to the need for self-actualization. Even though the principle of tension reduction governs functioning at the lower level needs, the satisfaction of one need does not imply satiation and quiescence. It is a temporary need gratification which brings about a temporary state of rest, but the emergence into consciousness of another higher need impels it to seek higher need gratification. In this sense, it could be said that stability could be brought about in gratified needs in the human organism till tension is sought for the gratification of higher needs in the tendential dynamism of the human personality toward self-actualization.

Example: The implementation of the ID product for Biology 101, achieved through eventual course presentation (e.g. with instructional aids and strategies, performance measures, evaluation techniques etc.) would remain stable as long as students, faculty members and the department accept it as a "fine and well-developed" course, without entertaining doubts about its ability 'to deliver the goods.' In this sense, both pragmatists and humanists are in agreement on this decision point.

SUMMARY

The comparative analysis of instructional development, as deatiled in the Instructional Development Institute Model, in terms of the philosophical positions of Pragmatism advocated by Charles Sanders Peirce and William James, and Humanism espoused by Abraham Maslow and Jacques Maritain, has resulted in a discovery of congruences (agreement or disagreement regarding decisions made), variabilities (agreement with reservations or modification of a decision process) and of empty sets (where neither philosophy seems to have anything to say) of both pragmatism and humanism with instructional development decision making processes.

These congruences, variabilities, and empty sets were the results of subjecting the twenty-four decision processes and their concomitant decision points to an analysis guided by the tenets of pragmatism and humanism.

The study found that implicit in these decision processes were a number of decision points that an instructional developer was called or obligated to responsd to in order to effect a program or a product in the instructional development context. While it was theoretically possible to identify a number of decision points in each of these twenty-four decision processes, only an average of two decision points, within the constraints of time and scope of this study, were subjected to the comparative analysis

by pragmatism and humanism.

The decision points, in the form of specific instructional development decisions to be made, were considered to be the most representative of each of the twenty-four decision processes. Each of these decision points was often, posed as an individual question that an instructional developer was called to answer, and was analyzed through the philosophical perspectives of both pragmatism and humanism. They were also illustrated with specific examples situated in the instructional context.

The bearing and import of the philosophical viewpoints of pragmatism and humanism on these decision points were accentuated through specific texts culled from the writings of the pragmatist and humanist philosophers. Whenever a decision point was not specifically addressed, extrapolations from related writings which exuded an overall consistency with their major philosophical theories (explained in Chapter III), were applied; in some cases, it was found that a particular decision point did not enter the purview of humanist and/or pragmatist philosophy.

The twenty-four decision processes were analyzed through a total of 46 decision points for this comparative study of the pragmatist and humanist philosophies on instructional development decision making and their congruences and variabilities with these decision points were recorded. The philosophical analysis of the decision

points, contained in and representative of each of the decision processes, reflect the bearing, import, and flavor of the philosophical congruences, variabilities and empty sets of both pragmatism and humanism on these twenty-four decision processes. In this sense, it is possible to structure a composite picture of the IDI Model decision making processes vis-a-vis the philosophies of pragmatism and humanism. (See FIGURE 7).

PRAGMATISTS

The Pragmatist position with regard to the decision points of 22 of the 24 decision processes is positive, i.e., the pragmatists overwhelmingly agree with the instructional development decision making process. Decision processes "c" and "e" ("Determine Learner Characteristics" and "Assign TAPS team Responsibilities" respectively) and their decision points do not evidence any clear pragmatist stand on them. The conclusion, therefore, will be an agreement of pragmatism in the philosophical traditions of Peirce and James, with the ID decision making process, as demonstrated by this limited set of decision points.

HUMANISTS

The comparative study of ID decision making by humanist thinkers, Maslow and Maritain, reveal agreements, rejections, and agreements with reservations on a number of

FIGURE 7

COMPARATIVE ANALYSIS OF INSTRUCTIONAL DEVELOPMENT IN TERMS OF HUMANISM AND PRAGMATISM

Stage	Function	Decision Process	PRAGMATISM 1	PRAGMATISM 2	PRAGMATISM 3	HUMANISM 1	HUMANISM 2	HUMANISM 3
I	1	a	X			X		
		b	X			X		
	2	c			?			X
		d	X			X		
	3	e			?			?
		f	X			X		
		g	X				X	
II	4	h	X				X	
		i	X					X
		j	X					X
	5	k	X					X
		l	X			X		
	6	m	X					X
		n	X					X
		o	X				X	
		p	X			X		
		q	X			X		
		r	X					X
III	7	s	X			X		
		t	X			X		
		u	X				X	
	8	v	X					X
	9	w	X			X		
		x	X			X		

KEY:

1 = Agree with decision process
2 = Disagree with decision process
3 = Agree with reservations
? = Position not known

decision points. Specifically, they are the following:

AGREEMENT :	Decision points for processes; a, b, d, f, l, p, q, s, t, w, and x (Eleven)
DISAGREEMENT:	Decision points for processes; q, h, o, and u (Four)
AGREEMENT with RESERVATIONS:	Decision points for processes; c, i, j, k, m, n, r, and v (Eight)
NO OPINION (EMPTY SET)	Decision points for process; e (One)

Analysis of the decision points revealed that about one-half (eleven) of the ID decision processes are congruent with humanist thinking. The humanists also agree with the decision points of nine of the decision processes, but with reservations. Four decision points are rejected as not reflective of humanistic thought.

The conclusion is that one cannot be a humanist in the tradition of Maslow and Maritain and approve all of the decision points in the ID decision making.

Nine of the decision points are accepted by the humanists, but with caution and reservations. Such reservations stem from the humanistic conception of a holistic or integral education in opposition to individual instruction which they perceive as atomistic. The key concepts in

this contrariety of terms are--individual vs. person, instruction vs. education, and irrational conscious vs. 'preconscious spirit.' The humanists conceive the latter of these contrarieties, i.e., person, education, and 'preconscious spirit' as more inclusive and holistic than their counterparts. These are only contrarieties and not contradictions, and, subsequently, their emphasis on education of the human person goes beyond the instruction of the individual. As a result, the humanists agree with these decisions, but are unhappy at the lack of comprehensiveness or omission of the wider dimensions of education evidenced in the ID decision making process. An decision process "e", which relates to assignment of TAPS team responsibilities, the humanists have nothing specific to say, this leaving it as an empty (No Opinion) set.

The comparative analysis of the ID decision making process from pragmatist and humanist viewpoints has yielded some significant results. Their philosophical underpinnings in the ID decision making process are clear and their implications will be examined in the next chapter.

FOOTNOTES

[1]AECT Task Force, Glossary and Definition, p. 1.

[2]Robert A. Braden & William R. Terrell, "The Challenge from Within: Some Unpopular Views on Instructional Development Topics," in Instructional Development: State of the Art, ed. Ronald K. Bass et al. (Columbus, Ohio: Collegiate Publishing, 1978), p. 218.

[3]Kent L. Gustafson, "Toward a Definition of Instructional Development: A System Approach View," Paper presented at the annual meeting of the Division of Instructional Development, AECT, Philadelphia, March 1971.

[4]Allen J. Abedor and Steven G. Sachs, "The Relationship Between Faculty Development (FD), Organizational Development (OD), and Instructional Development (ID): Readiness for Instructional Innovation in Higher Education," in Instructional Development: State of the Art, ed. by Ronald K. Bass et al. (Columbus, Ohio: Collegiate Publishing, 1978), p. 15.

[5]Marvin E. Duncan, "The Intricacies of Instructional Development," in Instructional Development: State of the Art, ed. Ronald K. Bass et al., 1978, p. 22.

[6]Thomas E. Harries, "Application of General Systems Theory to Instructional Development," p. 14.

[7]Peirce, Collected Papers, 5.443.

[8]James, Pragmatism, p. 125.

[9]Peirce, Collected Papers, 5.416.

[10]Maslow, Toward a Psychology of Being, p. 29.

[11]Peirce, Collected Papers, 5.397.

[12]James, Pragmatism, p. 97.

[13]James, Pragmatism, p. 127.

[14]Maritain, Introduction to Philosophy, p. 180.

[15]Fecher, The Philosophy of Jacques Maritain, p. 97.

[16]John Smith, Purpose and Thought, p. 115.

[17]Maslow, Motivation and Personality, p. 74.

[18]Maslow, Philosophy of Psychology, p. 227.

[19]Maddi & Costa, Humanism in Personology, p. 31.

[20]Peirce, Collected Papers, 2.220.

[21]Peirce, Collected Papers, 5.311.

[22]Maritain, Education at Crossroads, p. 2.

[23]Maslow, Memorial Volume, p. 93.

[24]Peirce, Collected Papers, 5.379.

[25]Thayer, Meaning and Action, p. 90.

[26]Maritain, Education at Crossroads, p. 24.

[27]Maritain, Education at Crossroads, p. 24.

[28]Peirce, Collected Papers, 1.44.

[29]Hamreus, "The Systems Approach to Instructional Development," p. I-23.

[30]Maslow, Journals of Abraham Maslow, p. 260.

[31]Peirce, Collected Papers, 5.9.

[32]Maritain, Education at Crossroads, p. 5.

[33]ibid.

[34]Maslow, Philosophy of Psychology, p. 241.

[35]Hamreus, "The Systems Approach to Intructional Development," p. I-24.

[36]Maritain, Education at Crossroads, p. 43.

[37]Trimby and Gentry, "State of ID Systems Approach Models," p. 3.

[38]Gallagher, Education of Man, p. 94.

[39]Peirce, Collected Papers, 1.404.

[40]Peirce, Collected Papers, 5.150.

[41]Robert Heinich, "Is There a Field of Educational Communications and Technology?" in Audiovisual Instruction, 13 (May 1973): 45.

[42]Fecher, The Philosophy of Jacques Maritain, p. 280.

[43]Peirce, Collected Papers, 5.378.

[44]Peirce, Collected Papers, 5.381.

[45]Castelle G. Gentry and Madeline J. Trimby, "Interface Analysis of ID Systems," Michigan State University, August, 1980. [To be published in Instructional Development: State of the Art (2nd ed.), by Ronald K. Bass et al.]

[46]See Prototype Specifications Exercise, pp. 71-73.

[47]Maritain, Education at Crossroads, p. 50.

[48]IDI Prototype Specifications Exercise, p. 80.

[49]Peirce, Collected Papers, cf. 5.424 - 5.437.

[50]Peirce, Collected Papers, 5.424.

[51]Maritain, Introduction to Philosophy, pp. 154-61.

[52]Maslow, Philosophy of Psychology, p. 232.

[53]NSMI, IDI Evaluation for Instructional Development, p. 32.

[54]Charles F. Hoban and Alkananda Rege, "Value Structures of Researchers and Non-researchers," AVCR 17 (1969): 411-2.

[55]Maslow, Philosophy of Psychology, p. 236.

[56]Milton Rokeach, Beliefs, Attitudes, Values: A Theory of Organization and Change (San Francisco: Jossey-Bass, 1968), p. 159.

[57]Maritain, Education at Crossroads, pp. 51-52.

[58]Maslow, Philosophy of Psychology, p. 236.

[59]Maddi & Costa, Humanism in Personology, p. 100.

[60]Peirce, Collected Papers, 5.416.

[61]Peirce, Collected Papers, 5.375.

[62]ibid.

[63]Maslow, Memorial Volume, p. 63.

[64]Maslow, ibid, p. 41.

[65]Peirce, Collected Papers, 5.35.

[66]Peirce, Collected Papers, 5.589.

[67]Peirce, Collected Papers, 5.543.

[68]Peirce, Collected Papers, 1.9.

CHAPTER V

CONCLUSIONS, LIMITATIONS, AND IMPLICATIONS

Introduction

This study was triggered by the question: "Will a philosophical investigation of educational and instructional practices and techniques prove to be a fruitful undertaking which would provide a framework that enables instructional developers to make better and more consistent decisions? More specifically, the study attempted to answer the following four questions:

1. How do humanists and pragmatists differ or agree in the way they respond to instructional development decision points based on the IDI Model?
2. Why do humanists and pragmatists so differ or agree in the way they respond to ID decision points?
3. Are there steps in the IDI Model that are not responded to by either or both of these philosophies?
4. What is the effect on the IDI product or instructional solution when decisions are consistent with one philosophy, and not with the other?

A personal philosophy, that is, a composite statement

based on beliefs and attitudes from which one draws personal purpose and direction, is assumed to be operative in every individual. This philosophy operates as a set of major inarticulate premises by which an individual interacts with the environment. Such a 'personal philosophy' of an instructional developer is instrumental in acting as a screening device so that in either personal or professional life, he or she makes decisions that are consonant with this philosophy.

Consequently, it is advantageous for the instructional developer to understand how these inarticulate premises filter the articulated statements, programs, and activities of an instructional developer and see their implications in professional work. It is possible that there may be a complete unawareness of a personal philosophy, or even an eclectic philosophical stand in which professional conduct is rationalized by espousing various philosophies. The inadequate conceptualizing of a personal philosophy may lead to hesitations and even contradictions, if one were forced to enunciate reasons that guided actions.

To understand these philosophical implications is to accept their involvements in many phases of personal and professional activities, including patterns of decision making. For a professional educational technologist, it is important to bring these philosophical considerations into focus when faced with situations where he or she has to accept or reject instructional decisions as well as to

provide reasons for such behaviors.

Thus, consistency with philosophical positions will not only affect instructional development decision making in a critical manner, but also provide a conceptual framework for theory building in educational technology that may dictate newer directions and fresher insights into this young profession that is constantly expanding by research.

Philosophical implications for educational technology is a field of research that has been little explored. One of the main concerns of this study was to search for a methodology that might treat philosophical concerns which future researchers could use in improving, refining, validating, or even rejecting existing and future concerns of educational technology.

With this end in mind, the present study investigated literature reporting on attempts at professionalizing the field of educational technology and examined the efforts toward building up an organized body of intellectual theory. Chapter I of this study details, in a summary fashion, those efforts at theory building and the role of educational technology as an essentially open system permeable to unifying inputs from the world of education, psychology, technology, and communication.

A brief journey through the history of educational technology, undertaken in Chapter II, detailed the various concerns and preoccupations of professionals in educational

technology, both research-theorists and research-practitioners, to come to grips with this pressing need for theory building. This historical survey of persons, events, and movements in their field helped to highlight some of the trends both away from experimental studies that investigated mostly marginal themes, like pieces of a jig-saw puzzle, and to building up of unifying theories that could put these pieces of research into some coherent pattern.

Breaking new ground in unexplored research areas is fraught with difficulties and uncertainties. The broad topic of philosophical implications relevant to educational technology far exceeds the expectations of any one dissertation, and there was full understanding that this study could at best serve as a desirable step in the right direction. But it was thought that the urgency of such an enterprise was well worth the risk of criticism which could question its comprehensiveness. It is hoped that this study may be one in a series of similar studies which may benefit the educational technology community.

Lacking any prescriptive precedents that may augur well for the design of a preliminary study like this, the scope of the present study has been purposely limited to a philosophical consideration of the decision making processes as exemplified in the IDI Model (See FIGURE 6).

The IDI Model is both descriptive and prescriptive, in the sense that the entire decision making process involved in this Model is placed in three stages (Define, Develop,

and Evaluate), and subsumed under twenty-four decision processes, that can be expanded into a number of specific decision points which an ID team or instructional developer is called upon to respond to, while aiming at an effective and efficient instructional solution.

The choice of the philosophical systems has been determined by similar considerations. Pragmatism has been a singularly unique American phenomenon and has exercised considerable influence on American education through the writings of William James and John Dewey. The posthumous publications of the Collected Papers of Charles S. Peirce establishes him as an American thinker of the 'first magnitude' who coupled incisive insights with logical rigor. Similarly, the humanistic reactions to the practice of technology in education has been both relevant and insistent. That educational technology, in its quest for relevance, must constantly examine its progression and directionality, has been a theme repeatedly emphasized by concerned professionals from this field. Subsequently, the humanistic psychology of Abraham Maslow and the integral humanism of Jacques Maritain were chosen to provide a second philosophical framework. Additionally, the philosophies of pragmatism and humanism were chosen because of their polar quality. This consideration was made on the assumption that if one's philosophical position does influence the decisions, and thus the product of instructional development, then it would be more likely to surface in

comparison with the more polar philosophical positions.

The methodology employed in this study included brief descriptions of the major theoretical stances of pragmatists and humanists with regard to questions of ethics, epistemology, and education, which were detailed in Chapter III, with more pointed references to specific ID decisions as given in Chapter IV. Each of the twenty-four decision processes is taken separately and introduced by an explanation from the IDI literature; specific decision points, considered representative of the decision processes are usually posed as questions and the pragmatist and humanist viewpoints are focused on the implications of these questions. They are followed by examples to highlight the specific positions of these two philosophies, and the comparative study concludes the examination in terms of congruence and variability in terms of their respective responses to decision points drawn from the IDI decision making processes (Chapter IV).

CONCLUSIONS

The conclusions of this analytico-comparative study may be grouped under the four research questions that were posed earlier.

1. <u>How do humanists and pragmatists differ or agree in the way they respond to ID decision points which are based on the IDI Model?</u>

While the pragmatists ask what the conceivable practical consequences of an action or decision are, the humanists take this pragmatist query a step further, by asking what the conceivable practical consequences of a decision are with regard to the good of the human being who strives to achieve fuller self-realization. The pragmatist's query is subsumed into the humanist's position, but with the added dimension of the humanist's concern.

The humanists and the pragmatists could agree about the effectiveness of an instructional solution, but when the humanistic dimension is found to be wanting, either disagreement or a guarded agreement (i.e., accept with reservations) is the result. So, when an instructional solution is pragmatically effective without any perceived discrepancy, as in the case of TV teaching, the humanists would reject it for its "dehumanizing" treatment of the students (See a 3).

This humanist concern is evidenced in the rank-ordering of TV teaching as a more urgent and important instructional problem (a 4), as well as:

- in the choice of personalized instruction over instruction with more sophisticated aids (b 2),

- in the choice of a teacher, from among two equally effective one, who did not insist on a "dehumanizing" rote memorization of course content by the students (b 3), and

- in preferring personal meetings and oral agreements to impersonal memos and notes, as a means for establishing

lines of communication among TAPS team members (f 1).

Even if a specific ID solution does not sport evident indications of a humanistic goal, i.e., is not directly contributing to an enhanced self-worth, still it could be acceptable to the humanists because the ID solution satisfies a lower level need gratification or improvement of a mental skill. The interpretation of the post-test data is not manifestly humanistic in orientation, but it satisfies, in some measure, the knowledge need gratifications of a person or helps to indicate the level of a mental 'faculty' or skill. In such ID solutions, both pragmatists and humanists would agree with each other.

2. Why do Humanists and pragmatists so differ or agree in the way they respond to ID decision points?

The pragmatists apply the pragmatist maxim "Does it work?" or "What are the conceivable practical consequences of a decision?" to every decision point as a rule for determining its meaning. The meaning of an intellectual concept or a proposition is explicable in terms of conditional propositions. The meaning of the effectiveness, for instance, of a multimedia presentation would be realized if it could be conceivably shown that it worked.

The humanist concern, however, centers around the Fuller Being (Maslow) or the integral development (Maritain) of the human person who, through interactions with the environment, strives to realize the full potentialities within oneself to be a self-actualizing person (Maslow) or find

one's true destiny in God (Maritain).

As long as the pragmatist and humanist philosophical concerns coincide, i.e., when the specific decision points ensure the realization of both the pragmatist and humanist objectives, there would be agreement.

In this sense, carrying out of an evaluation would be considered as testing for the effectiveness of an ID solution, and there would be agreement between the pragmatists and the humanists (t 1).

An existing 14-minute slide/tape program, effective in itself, is altered with additional slides to adapt the program to local needs, thus respecting the different characteristics of the students. Thus, the effectiveness and the humanistic design of the slide/tape program would find both the pragmatists and humanists agreeing with each other on the new ID product.

But if the humanistic concerns are sidestepped or neglected in favor of effective instructional solutions, the humanists would clash with the pragmatist's solutions. According to the humanists, this philosophical stance of the pragmatists is tantamount to an option for the supremacy of the means over ends, a position abhorrent to the humanists, and they would disagree with the pragmatists.

If there is a choice between a CAI program coupled with group discussion and the same without discussion, which have been previously proven as equally effective, the humanists would disagree with the pragmatists if the CAI

program without discussion were chosen over the one with discussion (q 1).

Similarly, specifying detailed procedures for instructional tryout needs to be tailored to the particular needs and characteristics of learners according to the humanists. An indiscriminate use of such procedures would generally be unacceptable to the humanists (r 2).

Sometimes, effectiveness is safeguarded by the pragmatist's ID solution and, for the sake of efficiency, they might advise procedures that might go counter to humanistic aims. To require that a learning task be completed may be indicative of its effectiveness, and to require that this be done in eight minutes may be efficient as well. But, if it places undue burden on the students and thus becomes dehumanizing, it would be rejected by the humanists (r 1).

3. Are there steps in the IDI Model that are not responded to by either or both of these philosophies?

The decision points relevant to "Determining Learner Characteristics" (decision process "c") do not fall within the immediate purview of the pragmatists, because the verifiability of the practical consequences of a decision is independent of learner characteristics, such as attitudinal postures, sex, and age. The goal-purposive behavior is proven to be effective when the verification phase of the solution attests that the paragmatist's solution actually worked or would work conditionally in given circumstances.

One might extrapolate from pragmatist viewpoints to cover this decision process, but it must be concluded that the pragmatists did not specifically deal with decision points relevant to this decision process.

Similarly, both pragmatists and humanists did not specifically address themselves to the consideration of decision points relevant to TAPS team responsibilities (decision process "e"). The consideration of suitable management models and assignment of responsibilities are not central to the consideration of effectiveness, even though they might influence the outcome. For the humanists, it is the individual person that is vital to the decision making process, and others are only ministerial agents. For the pragmatists, the question "Does it work?" cannot be satisfactorily answered by saying that it depended upon who was in charge.

4. <u>What is the effect on the IDI product or instructional solution, when decisions are consistent with one philosophy, and not with the other?</u>

The instrumental justification, for the pragmatists, is vitally linked with purposive behaviors and, in a scientific inquiry, it is validated in the verification phase. Whether these instrumentalities be variously termed as methods, techniques, media, or strategies, they receive their justification to the extent they are able to realize the purpose for which they were intended. Here, the question of effectiveness is the prime consideration.

But for humanists, the effectiveness of an instrumentality has to be extended also to include humanist concerns of personal growth of the learners in an instructional situation. For instance, 'expository' strategies (e.g. lecture method) employed in an instructional situation could be effective in achieving an intended purpose, but if this effectiveness could be coupled with the personal growth of the learner, the strategy would be humanistic as well. If a humanist were the instructional developer, he might more likely substitute the "effective only" lecture method with an "effective and humanistic" method of discovery learning. The ID product would have undergone a change due to the humanistic concerns of the instructional developer (k 2).

If a course presentation could be achieved with equal effectiveness by a lecture method or a group discussion, a humanist teacher would change the lecture method to a group discussion (l 1).

On the other hand, if a group discussion, originally viewed as enhancing the problem solving skills of the participants were to slip away from its intended purpose, and thus lack effectiveness, this ID solution would be rejected by the pragmatists. For the humanists, such a group discussion could contribute to enhanced self-worth; nevertheless, the pragmatists would consider it as having failed to achieve the goal in this particular situation. It

is not goal-purposive and would be rejected by the pragmatists.

It is pertinent to point out that, although this analysis suggests that their decisions and, therefore, their instructional systems, may differ, this analysis does not tell us if, in fact, these differently conformed systems perform with any significant difference in terms of their respective effects on learners. That is a subject for further reserch.

LIMITATIONS OF THE STUDY

Though the present study sought to cut fresh ground for educational technology through a pioneering effort of the nature of a philosophical investigation, it is not extended, by constraints of scope and time, to a complete philosophical analysis of the IDI Model by complete systems of pragmatism and humanism.

These could be more specifically stated.

1. A more comprehensive exposition of pragmatism will not only include the philosophical writings of Peirce and James, but also those of John Dewey, F.C.S. Schiller, and possibly those of George Herbert Mead and Clarence Irving Lewis. The present study is concerned only with the views of Peirce and James.

2. Even within the writings of Peirce and James, only two of their major works, namely, Pragmatism by William

James, and Volume 5 ("Pragmatism") of the Collected Papers of Charles S. Peirce, provided the focal points for this study.

3. Similarly, it was found that the term 'humanism' was too elastic and extensive to permit a precise definition and the varieties of humanistic outlooks had to be sidestepped with an option only for the humanisms of Maslow and Maritain. While it is debatable whether these two philosophers completely reflect the major theories of humanism, they are worth being looked into and judged according to their own merits.

4. Humanism and pragmatism are not viewed as totally disparate entities, diametrically opposed to each other, but rather as distinctive, and, sometimes, epistemologically contiguous. The possibility of one championing the concerns of the other is not totally excluded.

5. It is not contemplated that the IDI Model be viewed as coextensive with all the concerns of educational technology, or even instructional development, but rather as one of its subsets. The implication is a trust in the wider possibilities of educational technology that could be subjected to such investigations.

6. One final concern that may demand consideration is the possibility that the "systems approach" (of which the 24 ID decision processes represent a prime example) could be viewed as a pragmatic creation, to begin with. If true,

then unintentionally as it was, the cards may have been stacked against the humanists to start with, and this bias may have been carried through the analysis.

The understanding about the limitations of the present study may lead to a potentially promising area for further research in theory building.

IMPLICATONS FOR FURTHER RESEARCH

Future researchers in educational technology might consider some of the following approaches for building toward a synthesized and unified philosophy serving instructional development.

1. A full range of decision points could be generated for the twenty-four decision processes. The present study concerned itself with only a few of the possible decision points relevant to each of the twenty-four processes.

2. Replicate the study in depth for just one of the three stages, for example, Stage I (Define) or Stage III (Evaluate), for a more thorough examination of the impact of pragmatism and humanism on any of these stages and its concomitant decision processes and decision points.

3. Some other subsets of educational technology which could be subjected to such philosophical investigations might be mentioned: higher education, teacher training, management systems, economics of media, and the growing field of computer technology in instruction.

4. Replicate the study, using philosophies other than pragmatism and humanism. As examples, the following could be mentioned: the philosophies of John Dewey, Alfred North Whitehead, and any of the existentialist philosophies (e.g. Sartre, Jaspers). In this respect, relating philosophical positions to learning theory and their resultant implications for design of instruction, similar to the cognitive learning theories of Ausubel and Carl Rogers, may prove to be advantageous.

5. Carry out a longitudinal study of the decision points responded to by the members of an ID team. The researcher could follow through the actual decision making situations and processes as guided by the twenty-four decision processes. The present study was placed in a hyothetical situation, whereas the new study could deal with actual conditions.

6. Study the possible implications of eclectic philosophical positions of instructional developers as they affect their decisions and products. It is conceivable that effective and efficient instructional solutions would argue for an eclectic approach, at least in some cases, in the place of a strict adherence to a single philosophical stand. The impact of the philosophies of pragmatism and humanism on ID decision making processes are not to be construed in an "either...or" fashion, in the sense that an adherence to one philosophy necessarily precludes loyalty to the other. Rather, a more productive "both...and"

approach may prove to be viable, in the sense that a pragmatist stand would prove to be effective and successful in some ID decision making processes, while a humanist viewpoint would be more acceptable in another case. A future researcher could study whether this could be true and, if so, under what conditions.

7. Replicate the study using a real situation rather than a hypothetical one to determine if switching philosophic positions during a project causes conflicts or cancelling effects that reduce the effectiveness or efficiency of an instructional solution.

8. A weightier consideration would be the need for future students of instructional/educational technology to state their philosophical positions even if these initially seem to be inarticulate or embryonic. Such an articulation of philosophies would help a future researcher to study their implications in actual decision making processes made by these students. The result could lead to the posing of meaningful questions in ID decision making processes.

9. Relate Ervin Laszlo's "System-theoretical Analysis Experience"[1] to the decision making processes of instructional developers, especially where philosophical problems inherent in educational concerns could be attacked with fresh and testable concepts. Laszlo's work may be recommended as a possible conceptual framework for future studies.

This study could more accurately be viewed as an inchoate philosophical investigation that endeavored to

chart unexplored fields in educational technology. What is required is a series of more refined and incisive studies concerning the philosophical assumptions or biases of instructional developers at various levels and phases of their activities in educational technology. Obviously, this task is of a magnitude requiring the efforts of many scholarly researchers. For the present, however, this study is intended as a 'moving target' for future researchers who would advance and elaborate scientific research by initiating new and productive methodologies.

As Donald Hebb once stated, "a good theory is one that holds together long enough to get you a better theory."

FOOTNOTE

[1]Ervin Laszlo, System, Structure, and Experience: Toward A Scientific Theory of Mind. (New York: Gordon and Breach Science Publishers, 1969).

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