

Curriculum Change in Technology Education: A Theoretical Perspective on Personal Relevance Curriculum Designs

Stephen Petrina

Personal relevance curriculum designs are compatible with most mission and philosophical statements for technology education; yet, there are few, if any curriculum plans that emphasize this design. The experience-based nature of technology education suggests a certain affinity with personal relevance. Practice and theory within the profession has influenced and has been influenced by personal relevance designs and their inherent humanistic theories. While this interaction is apparent through any historical survey of the profession and evident in contemporary literature, the nature of personal relevance designs have been only partially examined. Within the profession, there is little information in the way of adequate description and implementation of personal relevance or other humanistic curriculum designs (Herschbach, 1989; Horton, 1985; McCrory, 1987; Moss, 1987; Zuga, 1989).

The purpose of this article is to provide insight into personal relevance curriculum designs through a discussion of a theoretical perspective on their nature, underlying rationale and application to a study of technology, source of content, organizational structure, and use in technology education. Most of the discussions are limited to a micro-curriculum as opposed to a macro level. However, inferences can be drawn to include both. The focus of the discussions is on middle, junior, and senior high levels of schooling. Personal relevance designs are grounded in humanistic theory; consequently, it was necessary to summarize and generalize a number of humanistic views, beliefs and convictions.

Personal Relevance Curriculum Designs

Steve Petrina is a doctoral student in the Department of Industrial, Technological, and Occupational Education, University of Maryland, College Park, MD.

Advocates of personal relevance curriculum designs maintain that education should and does play an integral role in a student's life and has a major influence on a student's self-concept, psyche, outlook on life, and world view. Emphases of personal relevance curriculum designs are on personal growth, integrity, autonomy, and unique meaning. Personal growth is viewed as the process of developing into a self-actualizing, autonomous, authentic, healthy, happy human being. The development of body and intellect are of equal importance. Education within this context means holistic growth toward personal and humane goals; an integration of the cognitive, creative, aesthetic, moral, and vocational dimensions of being human. The development of people who can transcend contemporary constraints is central to this design (Eisner, 1979; Klein, 1986; Kolesnik, 1975; Maslow, 1968; McNeil, 1981).

Students are free to develop, or are active in helping define their own curricula based on their personal problems, developmental levels, goals, interests, curiosities, capabilities, and needs. The following concepts are considered essential to the composition of a personal relevance curriculum design (McNeil, 1981):

1. Participation - There is consent, power sharing, negotiation, and joint responsibility by coparticipants. It is essentially nonauthoritarian and not unilateral.
2. Integration - There is interaction, interpenetration, and integration of thinking, feeling, and action.
3. Relevance - The subject matter is related to the basic needs and lives of the participants and is significant to them, both emotionally and intellectually.
4. Self - The self is a legitimate object of learning.
5. Goal - The social goal or purpose is to develop the whole person within a human society (p. 9).

These curricular concepts guide the development of learning experiences and their character is dependent on teacher-student-community interaction, deliberation, and discourse. Participants have educational autonomy and democratically bring their curricula into focus.

Curriculum planning then, does not follow traditional Mager, Skinner or Tyler models. Behavioral objectives do not enter into the curriculum. Ends and means are not predetermined, but are bound to resources and context. Within a personal relevance design, the content and modes of inquiry, modes of expression, and goals are matters of personal choice or democratic process. Teaching techniques that encourage both planning and spontaneity, expression, insight, and reflective thought are integral to overall curricular unity, comprehensiveness, diversity, and consonance. The educational process is defined within unique contexts. Humanists advocate freedom of curriculum development through an emphasis on personal relevance as a challenge to traditional subject-centered models. A discussion of the rationale for personal

relevance designs to help clarify the basis of the preceding concepts and postulates follows.

Underlying Curriculum Rationale and its Application to a Study of Technology

Generally speaking, personal relevance curriculum designs reflect pedagogical ideas of child-centered, and progressive educators, and have evolved to their current conceptualization within the humanistic education movement. With the humanistic education movement came a reinterpretation of student-centered education and an articulation of existential and hermeneutic philosophies, and third force and gestalt psychologies. Conceptions of the learner, knowledge, society, and the learning process have been shaped by these theories, and share a connectedness with schools of reconceptualized curriculum thought and experientialist curricular orientations (Klohr, 1980; Schubert, 1986).

The underlying rationale for personal relevance designs is supported by theories in humanistic psychologies and philosophies, and interactional sociologies. Considering humanistic theories and their related educational thought, humanists ask: 'what do subject-centered curricula do for personal relevance, freedom, individuality, and humane goals?' They suggest that

1. given the nature of mass culture and modern society, individuality, personal freedom, and humane goals are prohibitively constrained,
2. the school has a responsibility to emphasize the development of individuality, personal freedom, and humane goals,
3. the authoritarian and technocratic control that has pervaded the educational system constrains individuality, personal freedom, and humane goals,
4. prevalent, traditional, subject-centered curricula are inherently authoritarian and fail miserably in promoting individuality, personal freedom, and humane goals,
5. presuppositions and assumptions underlying traditional education need to be examined and challenged; and, individuals within a democratic society deserve better,
6. considering inherent problems of prevalent educational theory and curricula, humanistic theories are considerable within the context of a democratic society,
7. a restructuring of the schools is necessary to encourage individuality, personal freedom, and humane goals, and
8. curricula based on personal relevance should be considered as viable alternatives to traditional curricula (Holt, 1970; Kolesnik 1975; McNeil, 1981; Rust, 1975; Sloan, 1984).

This underlying rationale for personal relevance curriculum designs and its supporting theories are the bases of justification for curricular decisions concerning the content and style of the educational process.

Application to a Study of Technology

The preceding rationale can be applied to include a study of technology. Technology, in all of its manifestations and consequences, has been and continues to be a matter of critical concern to humanists (Dewey, 1900; Mumford, 1934; Rugg, 1958; Wirth, 1989). The humanization of technology, often reflective of the thought of Mumford, is intrinsic to the humanistic movement. Humanists advocate confronting the nature of technology through holistic, contextual and critical inquiry. Consciousness, insight, and knowledge related to the interaction of self, technology, culture, and society is essential to personal development. Inquiry into technology is integral to personal relevance curricula for the following, and other reasons:

1. technology is central to human experience and individual life worlds (Ihde, 1990),
2. the ubiquity and mediacy of technology shape our perceptions of the world and self (Ormiston, 1990),
3. human values, freedom and choice interact with technology on a personal level (Ihde, 1983),
4. personal livelihood is dependent on technology (Rapp, 1989; Wirth, 1987),
5. technology is a fundamental area of culture and human endeavor, and is inextricably interwoven with history, culture, and society; also, it is integrative in nature (Kranzberg, 1986),
6. technology is necessary for human existence (Huning, 1985),
7. technology is problematic and paradoxical for individuals and society (Rapp, 1989),
8. the artificial world is ambient; increasingly, technology is habitat (Ormiston, 1990), and
9. technology must be humanized and its direction subjected to limitations and determined democratically by society. There is tension between personal and social choice (Davis, 1981).

Humanists would also suggest that traditional, subject-centered education is permeated with technology; yet as a topic of educational inquiry, it is traditionally precluded to anything but passing glances or delivered at an impersonal level.

Source of Content

In personal relevance curriculum designs, content, as a body of established truths is not a source for the initiation of learning experiences. Humanists generally subscribe to a Deweyan instrumental view of disciplinary content. Disciplinary content has an instrumental function as a means of illuminating a student's life world. It is an instrument in the development of self-concept and incidental to the learning process.

Because of its inertness, separation from process and lack of personal meaning, humanists reject disciplinary content as knowledge on philosophical grounds. They maintain that knowledge is dynamic and in need of subjective

validity and a personal, practical dimension. Substance of thought, or the content of knowledge is of major importance to humanists. A source of content in a personal relevance curriculum design lies in the immediate concerns of the student's interaction with his/her environment.

This is not to say that content is ignored in a personal relevance curriculum design. A major challenge within any curriculum design is the determination of what is practical and essential to the welfare of the student, community, and society. No humanist would deny the importance of reading, writing, and communication, or other essential subjects and skills. They suggest that through deliberation and dialogue, the student, teacher, and the community interact as a source of essential content.

Humanists also recognize ecological, cultural and historical perspective as essential to the development of identity and social purpose. To a humanist, a critical perspective on the relationships of self to values, the community, the environment, cultural milieu, and historical continuum is essential to personal growth. The development of perception of patterns of human existence within history and culture is essential. But, humanists also suggest that equally essential is the realization that these perspectives and perceptions can be faulty and have the potential to constrain. Knowledge as personal, practical, and focused on the human condition is a significant concern. Humanists respond to the dilemma of knowledge by emphasizing inquiry, the nurturant potential of learning environments, and intrinsic motivation factors of relevance and choice. The problem in curriculum, as humanists view it, is not one of content, but one of style (Brown, 1978; Clark, 1990; Eash, 1971; Greene, 1971; Junell, 1979; Frymier, 1972; Kolesnik, 1975; McNeil, 1981; Pilder, 1969).

Organizational Structure

Advocates claim that a great strength of personal relevance designs is their emphasis on unity and integration. Within curricula based on these designs, the integration of emotions, thoughts, actions, and goals with the social setting and environment are emphasized. Methods such as nondirective teaching, synectics, seminars, awareness training, social inquiry, cooperative and individual projects, and discovery encourage self-expression and personal meaning. Gestalt techniques facilitate interaction and insight. Phenomenological and hermeneutic techniques help to bring experiences and personal narrative to levels of understanding. Organization is established through personal problems and interests. Units are used to encourage the development of unified and comprehensive experiences (Joyce & Weil, 1980; Kolesnik, 1975; McNeil, 1981).

Because of their holistic and integrating nature, and potential for unifying students with the learning environment, units are often used to provide organizational structure. Units within personal relevance designs are more attuned to the progressive interpretation than their more popular subject-centered readings. They are experience-based or based on the development of learning experiences that focus on significant themes in the students' relationship with their environment. Experience-based units help students recognize the relationships between their own experiences and broader problems and patterns in life. They integrate the knowing, feeling, and doing aspects of experience and learning. They integrate a student's thought, emotions and actions, with purpose, the means-ends continuum, and the environment. Units often present themselves as both project and problem, and students draw on diverse types of inquiry, knowledge and other resources to assist in their resolution. The organization provided is on the learner's psychological level as opposed to an expert's logical level (Burton, 1952; Ogletree, Gebauer & Ujlaki, 1980).

The determination of the nature and types of units used is bound to student and teacher negotiation. Cooperative units are developed to reach students on personal levels and broadly conceived to accommodate individuality. Curricula for a high school group could be organized within units such as: self-expression and modern culture; personal values and science, technology, and the military in the 20th century; work and economic amenity; social reform and personal agenda; technological change and humanistic imperatives; personal freedom and emancipation; energy, environment, and personal consumption; old materials, censorship, and new art; communicable disease, research and modern medicine; choice of apparel, fashion and style; or political efficacy and personal destiny. Junior high units are also focused on significant aspects of students' lives, and made accessible to their maturity level.

The organization of elements within units is a matter of individual and group interest, motivation, and resources. Emphasis is on connecting abstract concepts to real and personal themes inherent in the students' lives. Outcomes are dependent on the degree to which relevance, unity, integration, and personal

insight are developed. The challenge is to unify variety and diversity toward common goals.

Application to Technology Education

A review of literature leaves one to conclude that applications of personal relevance curriculum designs are nonexistent within technology education (or their existence has not been communicated through literature). Nonetheless, there are descriptions of programs, units, and other endeavors that are integrated in their curricular designs and suggestive of holistic and integrative approaches to studying technology. An example of the shape that personal relevance curricula might take has been provided.

The following examples of units are suggestive of holistic inquiry into technology. Maley (1973) presented units to support a study of technology, and structured them within an integrated curriculum design. His proposed units are experienced-based, and provide for student choice within a framework of societal needs. Other units within technology education that provide for student choice within structured frameworks include Maley (1989) and Pytlik (1981). In social studies, American history, the history of technology, and Science, Technology & Society (STS), there are examples of subject-centered units that are thematically based on technology, and suggest varying degrees of flexibility for student choice and freedom within a traditional setting (Barnes, 1982; Bensen & Eaves, 1985; Sinclair & Smulyan, 1990; Wagner, 1990).

There exists a wealth of exhibits, books, and articles that provide insight into the nature of technology. Museum exhibits and accompanying texts provide evidence of technology as both a social force and social product (Hindle & Lubar, 1988; Stratton, 1990). Introductions to technology, contextual readings of the history of technology, and thematic studies provide evidence of the interrelationships of technology to other endeavors in life (DeVore, 1980; Hughes, 1983; Volk, 1990). Surveys such as these begin to suggest the shape and avenues of inquiry that students might pursue within arrangements of units. There are a variety of resources within technology education, STS, the philosophy and history of technology, and other areas of inquiry from which teachers can draw. Insight into the holistic, contextual and integrative nature of technology, and accompanying modes of inquiry is necessary for teachers, but a solid grounding in humanistic theories and techniques is essential.

The shape that a personal relevance curriculum might take can be illustrated through a summary of a unit titled 'Prescription for conservation, health, and personal transportation: the bicycle!' This example would be appropriate for a junior high technology education class. Unity, integration, consonance, and relevance are addressed through thematic use of a common product in which most students within the junior high grades are sincerely interested. The technology of bicycles is advantageous in its historical significance, social effects, and multi-cultural utility; and, its relationships to physics, engineering, physiology, economics, geography, safety and health, sport and leisure, urban design, industry, and environmental policy. Through their simplicity and per-

formance, bicycles challenge students to apply techniques related to design, invention, experimentation, maintenance, and repair. Bicycles can inspire the formation of clubs, affiliation with cycling organizations, and planned bike tours. Most importantly, the centrality of bicycles to youth can be used to develop self-concept through insight into personal relationships with technology.

Following initial planning and coordination of problem and project areas, students begin to develop experiences that take advantage of the relationships of the bicycle to aspects of everyday life. Experiences develop through the use of a variety of resources found in laboratory, library, classroom, and community facilities. For instance, a group of students might: design and conduct a survey to determine the extent of bicycle use in their community, and report the results as compared to national and international trends; determine the needs of a cycling society and initiate a local or national letter-writing program to shape transportation policy; design cities of the future which accommodate a variety of modes of transportation; design and construct bicycle trailers with concern for specific speed and payload factors; survey and map geographic regions for potential bikeways; investigate the bicycle use of teen-agers in developing countries; design and conduct experiments that focus on physiological demands of cycling; print posters to promote bicycle use; or design a sculpture, and write songs or plays that express feelings toward human-powered transportation. Individual expression of emotion and ideas through artistic, technical, and practical capabilities in the form of paintings, sculptures, poems, songs, stories, engineering drawings, reports, models, objects of utility, and discussions is encouraged. Involvement in these modes of expression, and the use of personal and social families of teaching models, including gestalt and phenomenological techniques, encourage students to develop and own concepts of themselves and their relationship to their environment.

Conclusion

Current educational thought and evolving world views can be recognized as support for humanistic goals. Perspectives on learning suggest the importance of context, environment, and other life-shaping forces, and tend to strengthen other major tenets of humanistic theories. There is renewed interest in process, integration, and experience. Learning how to learn has become synonymous with education. Self-directed, original, creative, and critical-thinking people seem to be the new societal need. Ecology, conservation, balance, and the humanization of technology are of considerable global concern. Evidence of failed spending and programmatic educational efforts of the 1980s provide grounds for innovation. It has been suggested the paradigm shaping authoritarian, technocratic curricula has become dysfunctional (Eisner, 1979; Wirth, 1989). Within this context, an education that humanists envision may be a suitable alternative to predominant subject-centered orientations.

However, without complete restructuring of the schools, the demands of personal relevance curricula may prohibit them from being anything more than

alternatives. Likewise, without total commitment from teachers, administrators, and the community, meaning readjustment of an entrenched educational paradigm, it is unlikely that personal relevance designs will be accepted as anything more than aberrant. Nonetheless, the rationale underlying these curriculum designs is considerable.

Given their historical roots, personal relevance curriculum designs should not seem aberrant to technology educators. Still, technology educators have not embraced personal relevance designs and curricular proposals have been characteristically based on subject-centered, hybrid and often incompatible designs. At least some humanistic techniques have been assimilated into technology education classrooms; but, within technical or subject-centered designs, their nature and vitality may be distorted.

The subject-centered orientation of technology education curricula is comprehensible within its context. Technology education was conceptualized during an era of national emphases on academic standards and testing, and shaped by a dominant educational paradigm. Articulation of a humanistic mission and philosophy for technology education, and the design of curricula that are consistent with this mission would mean transcendence of the prevailing socio-political climate. Technology educators will have to position themselves within schools of reconceptualized curriculum thought and critical praxis. Dialogue and inquiry within the profession will have to be extended to include a concern for phenomenological, hermeneutical and other non-positivistic ways of interpreting the human experience of creating, using, and in general, living with technology.

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