Human Experience and Education
How Joy Enables Learning
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Abstract
Education is an ongoing activity in people’s lives. Through helping others learn I observed joy as an important factor for learning. One particular experience caused me to question the many elements that go into educating people, especially the emerging element of digital media in both physical and digital environments. However, to understand the advantages, disadvantages, and opportunities of digital media in education the idea of education must be well understood. To address these issues the goal of this paper is to explore the joy a human mind experiences through education. The theories of four respected and influential people in 20th century education are discussed to discover relationships between joy, the human mind, and education. John Dewey in *Democracy and Education* and Maria Montessori in *The Absorbent Mind*, though very similar in their thinking on experiences and environments, differ on the topics of growth and how a person learns with joy. Benjamin Bloom in *Human Characteristics and School Learning* emphasizes the need for adequate and frequent evaluations to ensure that a learner is cognitively and emotionally prepared for new learning. Finally, Scott Buchanan in *The Doctrine of Signatures: A Theory of Education in Medicine* communicates the need for the liberal arts, specifically the trivium, in professional education. Bearing in mind these points of view, the role of joy in education and considerations for designing responsible and effective teaching tools will be discussed.

Introduction
Education, theoretical and practical, schooled and unschooled, resides in my daily consciousness. From elementary school through college I tutored younger students and peers in reading, music, mathematics, science, computer programming, and theater management. At the same time, I do not take for granted giving clear directions to a stranger, installing mini-blinds, fixing a car, or consulting on a project. A music teacher once asked me why I put so much time and effort into helping younger students learn their band music. I simply said it was for the smiles on their faces when they “got it.” The students where filled with joy when they could play their music well and partaking in that also filled me with joy.

Throughout my schooling I recognized a gap between the students who learned more quickly than others, especially as the “smarter” students were placed in upper level classes. Being one of those students I grew not to depend on teachers as much as others, however a
poor teacher was often discouraging and a good teacher was usually inspiring. I noticed that poor teachers usually repeated the same explanations students did not understand a concept, often resulting in frustration from both the students and the teachers. In contrast, I realized that when I sat down to help classmates who were struggling with course material and altered the way I explained an idea according to my knowledge of their learning styles (visual, verbal, etc.) we all departed feeling more confident—joyful—in our knowledge of the lesson.

A turning point in these positive observations came after I aided in the development and implementation of a fundamental science course for non-majors. As a result of various requirements a series of lectures were built on digital slides showing verbal content as well as visual diagrams and animations. During the first run of the course I observed that many of the students did not smile; they did not have the sense of joy I experienced in my personal education or the joy I saw in those I tutored. Among the many possible reasons for this lack of joy I began to question the method of delivery: the effective use of digital presentations as a teaching tool.

I focus on the joy a person, a human mind, feels while learning because in my experiences I found that joy is a powerful realization of accomplishment and thrust to move forward. Alongside each action a mind has an emotional sensation. People express feeling joy in countless situations. But what does it mean to feel joy? For me, joy is when I feel accomplished yet not proud; when I realize what I have done and I want to do more. A dictionary definition of joy is as a “vivid emotion of pleasure” or “extreme gladness.” Spinoza defines joy more precisely as a “pleasure accompanied by the idea of a past thing which surpassed our hope in its event.” It is key that Spinoza defines pleasure as a change toward a perfection that is unreachable, and hope is “an uncertain pleasure” that arises from doubt in a past event. Thus joy stems from an action that exceeds one’s expectations.

But, why is the joy a human mind feels in education important to an interaction designer? I am a person who struggles to integrate my knowledge in the arts, sciences, music, and language among other areas. As a person interested in the interaction of people and knowledge I am interested in the tools that mediate such an exchange. The joy a human mind feels in education is important to me as an interaction designer because I am in a unique position between disciplines to understand the relationships between human minds and the means of learning and educating. I feel that it is at the intersection of ideas and ways of thinking that innovation and invention manifest themselves. From this perspective interaction designers can take part in the responsibility of creating opportunities for valuable educational experiences.

Living in a society where technological advances are emphasized and increasingly integrated into common usage, it is important to question not only how electronic media is integrated into education, but how well it is integrated. How do “smart”—electronically enhanced—classrooms help the teachers teach and the learners learn? Although concerns about roles of digital media in educational environments touch on a wide variety of issues, the scope of this paper is limited to understanding the philosophy of education, commenting on the whys and

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3 Spinoza, 128.
4 Author's Note: This essay is based on the Master's Thesis Essay written by the author for the named university.
5 Spinoza, 131.
means of education with respect to the structural level of learning a human mind undergoes. I will discuss four strong opinions on education from the early twentieth century including those by John Dewey, Maria Montessori, Benjamin Bloom, and Scott Buchanan.

**John Dewey in *Democracy and Education***

An overview of John Dewey’s philosophy of education includes two basic elements: a mind and an environment. When a human mind interacts with its environment, the mind has an experience. Through experience and reflection the mind changes, it learns. Over time, experiences and reflections cumulate to construct new meanings and relationships within the mind. Value rests in the attitude of a person, a human mind, to continue being educated throughout his entire life. Joy discovered in education contributes to the desire for further education.

In Dewey’s writing, the need to renew the human mind is fundamental to the purpose of education. From the continual process of aging emerges a continual need for the young to learn the culture of a society in order to maintain its life. Dewey defines life as the “customs, institutions, beliefs, victories and defeats, and recreations and occupations” of a people. We must consider that human beings are social creatures, and that “not only is social life identical with communication, but all communication (and hence all genuine social life) is educative.” Additionally, for a society to grow and move beyond mere maintenance, a society must change, which often comes at the expense of tradition. In order for growth in society to exist, there must be growth at the individual level where “the exposure to differences through communication, painful as it sometimes is, provides the only opportunity to test our private perceptions, to construct a total picture out of our separate visions, and to find new ways of negotiating unresolved problems.” By resolving problems and differences, a person and a society grow.

When people grow their minds and ways of thinking change. Dewey states that the “mind is precisely intentional purposeful activity controlled by perception of facts and their relationships to one another.” Accordingly, thinking “is the intentional endeavor to discover specific connections between something which we do and the consequences which result, so that the two become continuous.” A person does things in and to his environment, which includes one’s physical surroundings, as well as emotional, social, and cognitive aspects of one’s state of being: a history of experiences that one possesses. Thus an experience is when a person’s actions upon his environment and his perception of how his environment reacts toward him produce qualities that enable his mind to be renewed.

Subsequently, the elements necessary for instruction are the same as those necessary for reflection. A student needs a situation to have an experience, an appropriate problem to stimulate thought, to have information to then make observations to handle the problem.

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6 Dewey, 5.
8 Dewey, 103.
9 Dewey, 145.
10 Dewey, 69.
the ability to construct a solution in an orderly way, and the opportunity to test and clearly understand and validate the solution.\textsuperscript{11} It is the method of discovery and not just the facts that must be mastered so that a mind can move beyond a current situation.

However, as societies grow their cultures become too complex to only learn through daily experiences. So, the young are gathered into schools where more controlled environments enable clearer communication of complex information than in daily life regardless of one’s social class.\textsuperscript{12} At the same time, a genuine interest in the subject matter is needed to attain the attention needed for learning. If there is interest, the experience has potential to be joyful. In this sense, joy aids in the desire to continue learning. If this repeatedly occurs, then joy facilitates the process of continual education throughout life. Thus “the criterion of the value of school education is the extent in which it creates a desire for continued growth and supplies means for making the desire effective in fact.”\textsuperscript{13}

The educational moral that Dewey puts forth “is that no thought, no idea, can possibly be conveyed as an idea from one person to another.”\textsuperscript{14} A mind needs to communicate to stimulate its own perceptions and integrate its own experiences into its thinking, which constantly reconstructs its environments. Underlying this moral is that schooling conditions need to be suitable to learners’ personal experiences in understanding new ideas, and that positive intellectual feelings should be accessible.

**Maria Montessori and Childhood Education**

Maria Montessori’s work in *The Absorbent Mind* primarily focuses on the life and education of children. The ideas are similar to John Dewey’s, though subtle differences exist. Both authors promote the need for education through experience and for similar purposes, but the emphasis on how the human mind changes through education is where they differ. The authors also slightly differ regarding the value of joy in a human mind during education.

Educating the young for both Dewey and Montessori is for the purpose of life. Montessori’s focus is on the development and growth of an individual, and less on the growth of society. The role of education for the individual in a society is addressed such that it serves parents, children, the state, and international relationships as a “stimulus” to their progress through individual contributions.\textsuperscript{15}

Montessori explains that a child goes through phases of growth and development from birth through age eighteen. Current schooling structures imitate that pattern by accepting students around age six, dividing these stages of growth into three major periods, and completing the standard schooling around age eighteen. Montessori notes that “man, after eighteen, is fully developed and no further marked changes occur in him.”\textsuperscript{16} She places a different meaning on growth than Dewey by emphasizing that “marked changes” are capable of occurring only in the first eighteen years. The difference between Dewey and Montessori concerning the

\textsuperscript{11} Dewey, 163.
\textsuperscript{12} Dewey, 20.
\textsuperscript{13} Dewey, 53.
\textsuperscript{14} Dewey, 159.
\textsuperscript{16} Montessori, 20.
growth of a human being is that the former views growth as a continual change of one’s environment, while the latter views growth as a more human physiological activity that ceases to change dramatically at a particular age.

Montessori believes that education is a form of communication and is part of human growth. Dewey believes that education is communication and growth and life itself—congruent entities—all preserving the property of continuity. For him, the human mind is in a constant cycle of reorganizing bundles of experiences and reconstructing itself throughout life. From Montessori’s perspective, although one may continue to learn throughout life, the human mind goes through preset stages during childhood to “spontaneously” construct itself by absorbing experiences from its environment. It is the subconscious effort the child puts forth that changes to conscious effort in adulthood that ends this spontaneous growth and construction.

Both authors emphasize experience as the primary method of educating, and not a *pouring in* of information. Montessori stresses the importance of the physical environment—the arrangement of the room, its contents, who is in it, and how the people within the room interact—and what it affords young learners. The key is to stimulate human senses. The role of human senses for Montessori are as transmitters to aid in perception of the environment. For Dewey the senses are more than transmitters “because they are used in doing something with a purpose.” Although similar, the variation of the description indicates Dewey’s greater emphasis on aims and intentions that act through senses. Regardless of the variation, after sensation and perception the mind must do something with the information it receives.

Montessori notes that learners must use the mind’s powers of imagination and abstraction to maintain a state of concentration in an activity. Imagination enables the mind to create what it does not readily perceive. Abstraction enables the mind to reorganize and construct its content. For example, the alphabet is not a natural physical object, so people use imagination to create the concept and abstraction to make it usable in daily life, namely in language. Interest in the activity is essential for obtaining the attention needed to concentrate, especially for young children. Discipline is developed to control one’s own mind, and thus the ability to concentrate.

These abilities all lead to Montessori’s concept of normalization: a process by which young children create and develop their functions to learn throughout life. She emphasizes that a child’s duty is to become able to fully participate in society. Normalization is achieved when children grow out of characteristics of sloth, timidity, disorder, and caprice and into concentration, work, discipline, and sociability. The child absorbs certain qualities from his environment that enable him to become a good learner. It is in normalization that a child finds joy. Through concentration and subconscious effort a child’s mind reaches understanding and moves toward perfection.

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17 Montessori, 8.
18 Montessori, 182.
19 Dewey, 142. Emphasis is not altered from source.
20 Montessori, 184.
21 Montessori, 204.
Social life is a medium in which these activities occur. The social environment allows the students to lead themselves through learning experiences. In a classroom based on Montessori’s methods a child checks his own work for mistakes, and finds joy in making corrections. Education from the start is not for outer rewards but for the joy in “self-regulation,” or controlling one’s own learning. Without normalization the child is not aware of his own needs and the objects around him control his actions. With normalization a child’s mind is ready to actively participate in his community, take control of and responsibility for his actions and learning, and is willing to help others. He is practicing free choice, “one of the highest of all the mental processes.”

Maria Montessori’s work encompasses the idea that the human mind absorbs concepts from its environment in a joyous manner. This occurs during stages of physiological growth roughly until age eighteen, until the mind becomes conscious of the effort it puts forth in learning.

**Benjamin Bloom’s Theory of Mastery Learning**

The theory of school learning that Benjamin Bloom presents in *Human Characteristics and School Learning* centers on an educational system where students gather in a classroom environment. The theory of mastery learning is the primary focus. The variables that comprise it implicitly reach toward the ideas of growth and communication emphasized in the works of Dewey and Montessori. Generally, the mastery learning theory states that a mind enters a learning task with cognitive and affective behaviors. Those behaviors and the quality of instruction during the learning task bring about a level and type of achievement, a rate of learning, and affective outcomes. Together these elements form the mastery learning model. The premise to Bloom’s work is the idea that individual learners have cognitive and affective differences. Yet, if each learner is provided with the appropriate learning conditions from the start, then each learner has an equal chance at achievement.

Bloom differentiates cognitive entry behaviors from affective entry behaviors. Cognitive entry behaviors are defined as “those prerequisite types of knowledge, skills, and competencies which are essential to the learning of a particular new task or set of tasks.” Affective entry behaviors are stated as “a complex compound of interests, attitudes, and self-views.” If a mind is not prepared cognitively and emotionally to meet the challenges presented before it, then an encounter with a learning task it is poorly prepared for will more than hinder the cognitive development. It will also negatively impact the learner’s emotions and attitudes including subject-related attitudes, general attitudes toward school and school learning, and one’s self-concept as a learner that cascade into future learning tasks.

The quality of instruction includes the physical learning environment, methods, etc. that exist in a place of education. Bloom states four necessary components to instruction: cues to the student, participation by the student, reinforcement, and corrective feedback.

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22 Montessori, 245.
23 Montessori, 271.
25 Bloom, 32.
26 Bloom, 33.
27 Bloom, 105.
Reinforcement varies in its forms and may include some sense of approval by the teacher or group of peers for a student’s participation. One of the possible ways to monitor students’ progress is through points of evaluation or testing. Through various forms of diagnostic testing mastery can be set around understanding 85% of the material. If the student does not meet this criterion, then corrective procedures need to be initiated to ensure that the student is prepared for the next set of learning tasks.

“The major thesis of [Bloom’s] book is that a system of feedback to the teacher and students can reveal the errors in learning shortly after they occur, and if appropriate corrections are introduced as they are needed, the education system can be a self-correcting system so that errors made at one time can be corrected before they are compounded with later errors.”

However, the key to corrective feedback is the “extent to which students can be motivated and helped to correct their learning difficulties.” Motivation can be developed from an interest within the mind. That interest can lead to the mind taking responsibility for its own learning through discipline. Simultaneously, the environment in which a person learns is a major factor in shaping who a person is and becomes; it helps shape a mind’s sense of humanity. Bloom states, “The student should increasingly—with age and experience—be able to make decisions about where his or her learning is to be purposive and systematic and where the learning is to be exploratory and even ‘fun.’”

**Scott Buchanan’s Theory on Professional Education**

Scott Buchanan, a philosopher and educator, held a special interest in medicine. His book *The Doctrine of Signatures: A Defense of Theory in Medicine* examines the role of liberal arts and sciences in professional education as a means to provide tools to utilize the symbols and demonstrations of a discipline. Buchanan explains that the liberal arts and sciences provide not content but methods rooted in Greek thought. The idea that “security, success, and happiness are only to be achieved by the discovery of the ways and means of life and their isolation, regulation, and refinements” leads to questions of how these achievements occur.

Buchanan discusses the trivium in depth, which includes grammar, rhetoric, and logic. Grammar deals with the art and science of noting (or signifying) that produces notations. Rhetoric is the art of speaking, or using two (or more) languages to say the same thing. Logic is used to find relationships between two or more ideas. Altogether, the arts of the trivium are ways to move ideas from one point of view to another with a logical relationship applied by an act of rhetoric. By doing so, one can take an idea that began in one grammar system, and interpret it through another grammar system.

Buchanan writes about science as data being sensed and given artificial symbols (assigning a grammar), then ordered, combined, transformed, translated, etc. through measurement or

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28 Bloom, 125.
29 Bloom, 212.
30 Bloom, 5.
31 Bloom, 217.
33 Buchanan, 122.
34 Buchanan, 8.
35 Buchanan, 10.
classification (acting through rhetoric), and finally recognized as an analogy and used in a system to create abstract ideas (using logic). A common example is the grammar system of a person feeling his weight. As soon as that person steps on a bathroom scale (a rhetorical device), that feeling is translated into a number (through logic).

The educational value of a strong foundation in the liberal arts is monumental for the critical thinking in any professional discipline. The liberal arts serve to aid in the development of the mind. Overall the seven liberal arts are used to triangulate conclusions. The order and manner in which the arts are employed may alter the conclusion, or view of it, that a person discovers. By taking one art or discipline and holding it as the parent of all others is unfounded as each has an elemental value in the others. The liberal arts provide strong tools for artists and scientists to organize and reconstruct miscellaneous data into rational information: a development of the mind that Dewey, Montessori, and Bloom each address. To rationalize the arts the distinctions between form and matter must be made apparent.

Passively, a form can be received and maintained by matter. Actively the matter can transform into other forms by being acted on by an agent such as an artist. The ability to change the forms of matters effectively changes the form of the human mind.

So where does joy fit into Buchanan’s writing? It is at the crux of change. He focuses on the use of the liberal arts in learning, especially in professional education, to enable people to change their perspective and thinking on the world around them. It is through those changes that joy is most evident: when a person discovers new knowledge and feels a positive emotion in response.

Figure 1. A Modification of Benjamin Bloom’s factors for school learning from Human Characteristics and School Learning.

Conclusion

This paper is an exploration of philosophical viewpoints with respect to the joy a human mind experiences in education. First, by understanding these fundamental ideas and their differences, we can then begin to apply them to the technological advances of our time that promote the appropriate use of electronic media by our schools.

The ideas presented by John Dewey, Maria Montessori, Benjamin Bloom, and Scott Buchanan integrate to characterize the role of joy in human minds during education. These authors each focus on different stages of education; their ideas may differ, but the overall

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36 Buchanan, 82.
37 Buchanan, 4.
38 Buchanan, 130-1.
take on the emotional aspects of learning are closely related. Bloom presented a structured approach that includes affective and cognitive behaviors as characteristics students bring to an educational task. I slightly modified his diagram to more clearly show that those characteristics are constantly being changed by the experience of learning (Figure 1).

With the influence of Dewey, tools must be made to fulfill the need that every learning experience provide a situation to work in, an appropriate problem for the learner, adequate information to complete the activity, an orderly way to construct a solution, and an opportunity to validate that solution showing that the learner clearly understands what they gained from the experience. But how in digital media do we allow for interest, hope, and points of evaluation that allow students to experience joy in their learning? The issue probably encompasses the particulars of instructional design, content, sensory stimuli (visual, auditory, olfactory, tactile, and kinesthetic cues), software design, hardware design, and the appropriate context of use, as well as many other areas.

Through joy a human mind grows in education, in communication, in school, and in everyday life: in experience. Joy moves people to continue having experiences, and to reflect on and learn from those experiences; it moves people to live life. Without joy attitudes toward learning and growth degrade, thereby degrading the actual learning and attitudes toward life. So, how do designers of educational materials create tools that provide opportunities for meaningful learning experiences? This investigation points to some considerations and leads to many questions that cannot all be asked here. The point is to understand the significance of joy in education and life, and to use it when designing. If those in the field of design choose to use terms such as user-centered design or human-centered design, then perhaps they should consider learner-centered design. As people employ more digital tools, not only in their learning environment but also in their working and living environments, digital media must not take aimed activity from human minds, but facilitate those activities. The idea that education is driven and supported by a learner’s interactions with his environment may lead to vastly different ideas not only on the design of educational tools, but also on the design of spaces where people learn, how a curriculum is formed, and how information is communicated.