

Maria Montessori and Howard Gardner: Educational development in different cultures

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Abstract

Maria Montessori (1870-1952) proposed her own type of educational program, which she called “scientific pedagogy” because of its distinctive features. Since her first experiment at the “Children’s House” in 1907 in Italy, Montessori education has been practiced for almost a century in a variety of cultures. This paper will examine the characteristics of Montessori education in the light of current research. In addition to describing the academic basis of Montessori education, the paper also compares the education program with modern educational theories such those of Howard Gardner.

Maria Montessori (1870-1952), an Italian doctor, developed in the late nineteenth century an educational theory and practice based on her own experience and research. In Montessori education, the emphasis is on a child-centered education in which children can develop at their own pace. From its inception, Montessori education has been implemented in many countries, including the United States. Since the mid 1950s, with a revival of interest in early childhood education, Montessori education has once again caught the attention of American educators. It has been adapted to be more suitable to education in the United States, thus differing from the original concept of Montessori education. “American Montessori” or “Americanized Montessori” education has led to a further expansion of Montessori schools for students from preschool age to eighteen years old, more Montessori teacher training courses at various levels, and an accreditation system (Kai, 1976, 2002).

One of the major influences on current educational theory and practice in the United States is Howard Gardner. He has proposed The Theory of Multiple Intelligences (hereafter referred to as “MI”) (Gardner, 1983), in which human intelligence is comprised of many separate abilities, each relatively independent of the others, and which cannot be assessed by standard psychometric assessments. His approach has led to more personalized curriculum instruction and assessment.

This paper examines the similarities and differences of the educational theories and practices based on the work of Montessori and Gardner: their academic backgrounds, their theories of intelligence and culture, their ideas of educational environment, and the implementation of their theories and assessment. By comparing the Montessori approach with modern educational theories such those of Howard Gardner, this paper will highlight the factors that have led to Montessori education being accepted in different cultures and educational settings.

Academic Backgrounds

Gardner and Montessori took into account relations between science, human intelligence, and educational practices. This similarity is evident in their work.

Montessori's main academic influences are nineteenth century science and medicine such as biology, experimental psychology, and pedagogical anthropology. She emphasized scientific pedagogy based on science as a way to devise a new educational method. In addition, she worked at hospitals as a doctor and examined patients including handicapped children. She also opened a "Children's House" for culturally deprived children.

On the other hand, Gardner studied neurology, cognitive-developmental psychology, and anthropology. Regarding the reinterpretation of intelligence, he takes into account the work of anthropologists, neuroscientists, computer science, and artificial intelligence, thus scholars who are not psychologists (Gardner, 1999, p.19). Gardner worked as researcher at a number of different hospitals where he met patients with impaired language and other kinds of cognitive and emotional disorders. He also visited other laboratories, especially Harvard's Project Zero, and worked with ordinary and gifted children in an attempt to understand the development of human cognitive capacities (pp.30-31).

Theories of Intelligence and Culture

Montessori defined intelligence as "the sum of those reflex and associative or reproductive activities which enable the mind to construct itself, putting it into relation with the environment" (Montessori, 1965, p.198). She proposed a difficult task, that is, "how to diagnose the human intelligence, and distinguish the person who is intelligent from the person who is not" (Montessori, 1913, p.252). She criticized intelligence tests that did not consider social factors and she pointed out that "we have not yet learned the means of *judging intelligence*" (p.252). She argued that "the Binet-Simon tests, can neither measure anything, nor give even an approximate idea of intellectual levels of intelligence according to age" (Montessori, 1965, p.111). Montessori was against scientific research based on arbitrary and superficial tests such as those of Binet and Simon (p.110).

Although in a different era, Gardner has also criticized the concept of a unitary intelligence. He proposes that intelligence cannot be quantified and that each child's intelligence cannot be judged on the same scale. Gardner does not define intelligence as a unitary concept, but rather he pluralizes it as multiple intelligences reflecting a wide range of human capacities. It is difficult to determine precisely how many separate intelligence might exist, but he lists eight; logical-mathematical intelligence, linguistic intelligence, spatial intelligence, musical intelligence, bodily-kinesthetic intelligence, interpersonal intelligence, intrapersonal intelligence and naturalist intelligence. Gardner (1993) has pointed out that all definitions of intelligence are shaped by the time, place, and culture in which they evolve (p.231). His definition of intelligence is "the ability to solve problems or to create products that are valued within one or more cultural settings" (Gardner, 1999, p.33), and "a biopsychological potential to process information that can be activated in a cultural setting to solve problems or create products that are of value in a culture" (p.34).

Montessori emphasized the importance of individuals in the group and that of human society towards the whole community, the cosmos. Gardner is similarly aware of the importance of the community and as such, has highly praised the Suzuki method and Reggio Emilia approach because they were developed in their communities and respected their cultural heritage (Gardner, 2000, p.90).

Thus, Montessori and Gardner studied not only individual child development, but also the relations between an individual, culture, and society. The focus is not only on individual differences, but also on the society and culture in which children live. However, their theoretical dimensions are different.

Montessori discussed her theory of human life, development, and society not only biologically, but also metaphysically (Kai, 1985, 1993). Her concept of a biological life is interpreted as a “divine life.” The child’s educational environment, community, human society, and culture are based on the “universe” or “cosmos.” Montessori’s Normalization Theory helps children develop their own potential in accordance with an inner law, which includes a metaphysical level. Since Montessori relates intelligence with character or mind, intelligence is a unit and cannot be pluralized. Her cosmic education includes science, culture, and religion. Montessori was convinced that children could develop through spontaneous intelligent learning activities. Accordingly, intelligence ability should be developed spontaneously, that is, individuals should be given freedom for life activities and to develop (according to inner laws) toward normalization. She related human personality to the human mind. Human intelligence was a force to support the development of the mind and formation of character. She placed human intelligence on the same level as human personality and mind (Kai, 2000). Montessori also found these concepts in the child’s potential life, and believed they appear as a result of normalization.

On the other hand, Gardner emphasizes the importance of the educational landscape to achieve an understanding of the true, the beautiful, and the good which all reflect a philosophically oriented culture (Gardner, 2000, p.8, p.19, p.59). He seeks to establish a theory of intelligence that spans a range of cultures (Gardner, 1993, p.232). He emphasizes scientific studies with culture because he believes that the brain has the potential to develop differently, depending on the culture (Gardner, 2000, p.78). Therefore, Gardner recognizes that intelligence is a biopsychological potential which is characterized in a culture (Gardner, 1999, p.82). However, he does not categorize spiritual or existential intelligence in his MI theory, because cultures devise religions, mystical or metaphysical systems for dealing with existential issues (pp.60–66). In addition, moral intelligence is neglected because morals represent a subspecies of a cultural value system (p.67). Thus, the MI theory is not connected to any set of morals or values (p.89). Gardner recognizes that morality is not an exercise of the computational system he calls intelligence, but is rather a personal decision (p.68). He avoids epistemological problems and he envisages that intelligence should not be expanded to include personality, motivation, will, attention, character, creativity, and/or other valued human capacities (p.204). He believes that everything in the mind is a product of the brain. Although he accepts the idea that people develop in an ever-changing human environment, he rejects any ethereal spirit, extrasensory communication, angels, or demons (Gardner, 2000, p.78).

Educational Environment and Fair Assessment

Montessori’s and Gardner’s educational theories and practices emphasize an individualized student-assessment-curriculum, which enables teachers to judge individual differences in the acquisition of internal order and the progressive stages of intellectual development. In addition, they relate methods/programs with means of assessment because an effective means of assessment for each child’s development should be relevant for its appropriate educational environment.

Montessori devised and provided children with a prepared environment that included materials or intelligence-fair instruments to help and test each child’s development. An organized environ-

ment is made available with elements of free choice for all children according to their interest, inner development, and own pace or rhythm. Assessment in Montessori education means auto-education, self-education, self-discipline, and independence. Montessori materials have a law or patterns that relate to the child's developmental law or stages. In other words, they have "articles of mathematical precision" and "a system of materialized abstractions" (Montessori, 1967, p.186). Therefore, Montessori materials may be compared to a systematized "mental test" (Montessori, 1965, p.72).

On the other hand, Gardner's Project Spectrum uses documentation in a variety of forms. There include score sheets and observation checklists to portfolios and tape-recordings (Gardner, 1993, p.92). The Spectrum Approach to assessment measures "intelligence" by using instruments that look directly at the type of intelligence being used, instead of through a linguistic or logical-mathematical lens (p.87). Gardner focused on devising an intelligence-fair set of MI measures through the Project Spectrum with inviting materials that children would find familiar and comfortable to play with (Gardner, 1999, p.81).

Both Montessori and Gardner stress that the methods of education should be organized in accordance with the needs of psychological or mental life. This enables teachers to judge individual difference in the acquisition of internal order and the progressive stages of intellectual development.

Implementing their Theories

Montessori experimented with her ideas at the "Children's House," while Gardner implemented his theories at Project Zero and the Spectrum Approach. Montessori organized her educational method into the Montessori schools, while Gardner made his theory available to educators. He has not developed "Gardner schools."

Montessori education was implemented on the basis of experimental and empirical data. In her pedagogical experiments, she prepared an environment in which a child could be free and observed children in that environment. Montessori developed her method according to the reactions of the child. Her continuous record taking on each child took into account anthropological measurements, a biographical chart for each child, the length of time a child was engaged in certain activities, and a curve of work.

Gardner's Multiple Intelligences theory is based wholly on empirical evidence and may be revised, depending on empirical findings from further research (Gardner, 1999, p.85). His Spectrum Approach was designed to explore various learning areas, each featuring particular materials and a unique set of elicited skills and intelligences (Gardner, 1993, p.90). Teachers observe a child's interests and talents over the course of the year. No special means of assessment are used. Information collected about each child is summarized by the research team in a brief essay called a Spectrum Report. This document describes the child's personal profile of strengths and weaknesses and offers specific recommendations about what might be done at home, in school, or in the wider community to build on strengths as well as to bolster areas of relative weakness (p.91). The documentation takes a variety of forms, from score sheets and observation checklists to portfolios and tape-recordings. Project Spectrum, an assessment and curriculum program for preschool children, stresses the notion that every child is unique (p.92).

Montessori and Gardner provide educational materials, which encourage each child to act according to his/her interest. Montessori materials are organized to follow a particular pattern,

while Gardner's are flexible with enriching activities in a wide variety of disciplines, including mechanics and construction, movement and music (Chen, 1998). At a Montessori school, the educational environment is organized; certain kinds of materials which relate to each learning area are available. There are daily-living exercises, sensorial materials, language and mathematical materials, artistic or cultural materials. In Gardner's Project Spectrum, areas of cognitive ability are prepared. These include numbers, science, music, language, visual arts, movement and social skills (Gardner, 1993, pp.91-92).

Conclusion

Montessori and Gardner each developed their own theory in a different era and culture. However, some similarities can be found. Both believe the results of academic study should be the basis of educational decision. Both see the importance of using the latest scientific research as well as the culture and society for the study of human life. Both emphasize the relationship between theory, practical methods/programs and assessment. Both maintain that an effective means of assessment for each child's development should be based on an appropriate educational environment (program/materials/contents) related to the child, which leads to educational concrete factors (view of the child, educational view points, practical methods, teacher roles, environments and assessment). In addition, three other similarities have been highlighted by Montessori and Gardner. First, there must be fair assessment in education or development. Next, there should be no bias against fixed ideas or patterns in the process of study. Finally, cross-cultural viewpoints should be accounted for. Although there are theoretical and practical differences between the theories of Montessori and Gardner, both focus on fair education and the need to take account of cross-cultural viewpoints. As the result of these characteristics, their work continues to be relevant, thereby encouraging education to focus on the essence of education, that is, developing every child's individual abilities as opposed to educational trends which Gardner criticizes as "Westist, Testist, Bestist" (1993, p.12). These theoretical and practical factors enable Montessori education to continue to be implemented in different cultures.

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