

Self-Directed Education—Unschooling and Democratic Schooling FREE

Peter Gray

Subject: Alternative and Non-formal Education , Educational Theories and Philosophies Online Publication Date: Apr 2017

DOI: 10.1093/acrefore/9780190264093.013.80

Summary and Keywords

Education, broadly defined, is cultural transmission. It is the process or set of processes by which each new generation of human beings acquires and builds upon the skills, knowledge, beliefs, values, and lore of the culture into which they are born. Through all but the most recent speck of human history, education was always the responsibility of those being educated. Children come into the world biologically prepared to educate themselves through observing the culture around them and incorporating what they see into their play. Research in hunter-gatherer cultures shows that children in those cultures became educated through their own self-directed exploration and play. In modern cultures, self-directed education is pursued by children in families that adopt the homeschooling approach commonly called “unschooling” and by children enrolled in democratic schools, where they are in charge of their own education. Follow-up studies of “graduates” of unschooling and democratic schooling reveal that this approach to education can be highly effective, in today’s word, if children are provided with an adequate environment for self-education—an environment in which they can interact freely with others across a broad range of ages, can experience first-hand what is most valued in the culture, and can play with, and thereby experiment with, the primary tools of the culture.

Keywords: self-directed education, self-directed learning, unschooling, free schools, democratic schools, Summerhill, Sudbury Valley School, curiosity, play

Self-Directed Education—Unschooling and Democratic Schooling

It is essential to distinguish between education and schooling. *Schooling*, as generally understood and as the term is used here, refers to a set of procedures employed by specialists, called teachers, to induce children to acquire a certain set of skills, knowledge, values, and ideas, referred to as a curriculum, chosen by the teacher or by a schooling hierarchy above the teacher. *Education*, in contrast, refers to a much broader concept. It can be defined as cultural transmission, that is, as the entire set of processes by which each new human being acquires some portion of the skills, knowledge, values, and ideas of the culture in which he or she develops (Gray, 2011A). With this definition, schooling is a relatively small part of education. That portion of education that does not occur as a result of schooling is largely *self-directed education*, education directed and controlled by the person becoming educated. It should be noted at the outset that *self-directed education*, as used here, refers to all education that derives from a person’s self-chosen activities, whether or not those activities are consciously directed toward education.

If you Google *self-directed education*, you will be directed to the more common term, *self-directed learning*. Most of the research and writing on self-directed learning has to do with specialized learning by adults of career-related information or skills, or with self-directed learning within the context of formal schooling. Research of this type, for example, fills most of the pages of the *International Journal of Self-Directed Learning*, where the most frequently cited publication is Merriam, Caffarella, and Baumgartner's book *Learning in Adulthood* (Holt, Smeltzer, Brockett, Shih, & Kirk, 2013).

One of the earliest published studies of self-directed learning within a traditional school context was one in which a group of delinquent boys, age eight to 16, were assigned to a special space in the school where there was no teacher, only a supervisor who was more interested in their comportment than their academic education (Williams, 1930). The room contained a number of textbooks and other educational materials, which the boys were free to use or not, as they wished. Remarkably, over the course of the four-month experiment, the boys showed an average academic gain of 15 months in language, 14 months in arithmetic, 11 months in reading, 11 months in science, and 12 months in overall educational age, as indexed by achievement tests given at the beginning and end of this period. Despite their frequent past truancy and reputation for trouble making, these boys were, on average, at grade level in academic achievement at the beginning of the experiment and above grade level at the end. A possible explanation is that they were bright boys, who were perfectly capable of learning on their own, and who had rebelled against being told by teachers what, when, and how to learn.

The focus of this review is not on adult learning, nor on self-direction in the context of traditional schooling. Rather, it is on self-directed education as a substitute for typical K–12 schooling. I have chosen to use the term *self-directed education*, rather than the more common *self-directed learning*, because the former term more clearly refers to the self-directed acquisition of a broad set of skills, knowledge, values, and ideas that help the person adapt to and thrive in the culture, rather than to any single, specific instance of learning.

There are two primary means of self-directed education for children of school age in our culture today. One is through what is commonly called *unschooling*. Unschoolers are officially registered with their local school districts as homeschoolers, but they are allowed by their parents to take full charge of their own education. The term *unschooling* was coined in the United States, in the 1970s, by the educational critic John Holt (see Farenga & Ricci, 2013), but is now in general use throughout the world by families that pursue this route. The other means of self-directed education is to enroll in a school designed for self-directed education. Although these institutions are called “schools,” and are legally classed as schools, they do not engage in *schooling*, as the term was defined at the beginning of this section. They are generally referred to as *democratic schools* or *free schools*, but the terminology is not used consistently. Both of these terms are sometimes used for a school that would not satisfy the definition used here as a setting for self-directed education. For example, in England the term *free schools* refers to independent, state-funded schools that have some freedom from government control in curriculum development and are free for students to attend, but are not designed for self-directed education, similar to charter schools in the United States (United Kingdom Government, 2016).

This review begins with a discussion of the biological foundation of self-directed education and then proceeds to sections devoted to unschooling, the free-school movement of the 1960s and 1970s, and democratic schooling today. It ends with a discussion of directions for further research.

Biological Foundations for Self-Directed Education

From a biological perspective, schooling is new but education is not. Schooling has been a common and significant part of

childhood experience for only about two centuries, even in the most developed Western cultures (Mulhern, 1959). In contrast, education has been crucial to our species' survival for as long as we have been human beings.

Beginning at least two million years ago, our hominin ancestors started down an evolutionary path that made survival increasingly dependent on cultural transmission (Konner, 2002, pp. 29–53). They developed ways of surviving that depended increasingly on an accumulated body of knowledge and skills that were passed along from generation to generation and adapted by each generation to meet new needs. They also came to depend on increasingly high levels of cooperation and sharing, well beyond that of any other primates, which required the transmission, from generation to generation, of social mores, rules, rituals, stories, and shared cultural beliefs and values, all serving to bind individuals together and promote cooperation. Throughout this long period, natural selection would operate to endow children with strong instinctive drives to attend to and learn from the cultural activities around them, as those who failed to do so would have a much reduced chance of surviving or of attracting mates for reproduction.

Self-Directed Education in Hunter-Gatherer Bands

Through all but the most recent 11,000 years or so of our evolutionary history, we were all hunter-gatherers. We can't go back in time to examine the behavior of our pre-agricultural ancestors, but we can examine the behavior of those groups of people who managed to survive as hunter-gatherers, in geographically isolated parts of the world, into modern times. Although hunter-gatherer cultures vary in many ways from one to another, anthropologists who have studied such cultures consistently report that children's education, in all of the groups that have been studied to date, is essentially entirely self-directed (Gray, 2009).

Children and young adolescents in hunter-gatherer bands are free to play and explore in their own chosen ways essentially all day every day. Very little if any serious work is expected of them, partly because the adults recognize that self-directed exploration and play are the means by which children acquire and practice the skills needed for successful adulthood and partly because hunter-gatherers place high value on free will and believe it is wrong to interfere with another person's autonomy, including that of a child, except in cases of serious danger (Draper, 1976; Gosso, Otta, de Lima, Ribeiro, & Bussab, 2005; Gray, 2009). The children learn by observing their elders and incorporating the activities they observe into their play. They play at hunting, tracking, digging up roots, identifying plants and animals, defending against pretend predators, and building huts and other artifacts, and also at the music, dances, and art of their culture, and in the process they become skilled at all these activities. Gradually, as they become adults, their playful activities become productive activities that help to sustain the band (for full documentation, see Gray, 2009).

Here, for example, are the words of one group of researchers concerning children's learning in hunter-gatherer bands (Hewlett, Fouts, Boyette, & Hewlett, 2011, p. 1173): "Foragers value autonomy and egalitarianism, so parents, older children, or other adults are not likely to think and feel that they know what is best or better for the child and are generally unlikely to initiate, direct, or intervene in a child's social learning. This is consistent with our finding that forager social learning is self-motivated and directed, but it also suggests [consistent with observations] that teaching and explicit instruction should be rare or absent."

These researchers go on to point out that, while hunter-gatherer adults rarely initiate teaching, they are nearly always willing to help children who seek help, and they allow children to join them in their activities, even when the children are more hindrance than help, because they understand that this is how children learn. Hewlett et al. write (2011, p. 1173): "Sharing and giving are also forager core values, so what an individual knows is open and available to everyone; if a child wants to learn something, others are obliged to share the knowledge or skill. . . . Since learning is self-motivated and directed, and takes place in intimate and trusting contexts, hunter-gatherer children are generally very confident and self-assured learners."

Curiosity, Playfulness, and Sociability as Natural Motivators of Education

From a biological perspective, the human drives to explore, play, and interact socially with other people are the primary motivators of education. These drives exist to some degree in all mammals, but they have been expanded upon and shaped in humans, by natural selection, to serve the function of education, and they are especially strong during childhood and youth (Gray, 2013).

Aristotle (trans. 1963) began his famous treatise on metaphysics with the words, “Human beings are naturally curious about things.” Despite its obviously powerful role in human experience and education, human curiosity has attracted relatively little research. Most of what has been conducted has been with infants, toddlers, and preschool-aged children. Such research has shown that even newborns gaze longer at unfamiliar objects than at those they have already seen and, by four or five months, infants eagerly explore manually, as well as visually, any new objects that are within reach to learn about their properties (e.g., Renner, 1988). By age four years, if not sooner, children experiment on new toys and other objects in quite systematic ways to find out what they can do with those objects (e.g., Bonawitz, Shafto, Gweon, Goodman, Spelke, & Schulz, 2011; Schulz & Bonawitz, 2007).

Observations of unschooled and democratically schooled children in our society (discussed below), and of children in traditional societies without schools, suggest that curiosity does not diminish as children grow older, but continues to motivate ever more sophisticated modes of exploration. In his co-authored book on the anthropology of learning in childhood, Lancy, Bock, and Gaskins (2010, p. 5) wrote, “The single most important form of learning is observation.” Children are especially curious about the activities of other human beings, especially those who are older than themselves, and they learn by watching them intensely and then incorporating what they observe into their play.

Playfulness serves self-educative purposes complementary to those of curiosity. While curiosity motivates children to seek new knowledge and understanding, playfulness motivates them to practice new skills and use those skills creatively. The first person to develop this *practice theory of play*, from an evolutionary perspective, was the German philosopher and naturalist Karl Groos. In *The Play of Animals* (Groos, 1898), Groos argued that play came about by natural selection as a means to insure that animals will practice the skills that they must in order to survive in their natural environment. This theory is quite well accepted by researchers today who study animal play. It explains why young animals play more than older ones (they have more to learn) and why those animal species that depend most on learning and least on rigid instincts for survival play the most. Moreover, as Groos pointed out, one can predict quite well what animals will play at by knowing the chief constraints on their survival. For example, predatory animals play at chasing, or creeping and pouncing, while prey animals play at fleeing, dodging, and escaping.

In a second book, *The Play of Man* (Groos, 1901), Groos extended his insights about animal play to humans. He pointed out that humans, having much more to learn than do other animal species, play much more than do other species. He also pointed out that young humans, unlike other animals, must learn different skills depending on the unique culture in which they develop. Therefore, he argued, natural selection led to a strong drive, in human children, to observe the culture-specific activities of their elders and incorporate those activities into their play. Groos referred to his theory as a theory of play, but it could equally well be viewed as a theory of self-directed education, or at least as one major foundation for such a theory. Children educate themselves by observing the skills exhibited by those around them and then playing at those skills to become good at them. Although research on hunter-gatherer education came after Groos’s time, the findings from such research fit very well with Groos’s theory, and so do observations of play in modern democratic schools (discussed below).

Our species is not only the most curious and playful of mammals, but also the most sociable. Instinctively, we understand that

our own survival depends on our ability to connect with, cooperate with, and learn from other people. We are irresistibly drawn to others, especially when we are young. We want to do what those around us do, know what they know, and share our own knowledge and thoughts with them. Thus, our natural sociability provides a major foundation for self-directed education.

Our most unique adaptation for social life, and also our most unique adaptation for education, is language. Language allows us to share all sorts of information with one another, well beyond what is possible for other species. It allows us to tell one another not just about the here and now, but also about the past, future, and hypothetical. As the philosopher Dennett (1994) put it, “Comparing our brains with bird brains or dolphin brains is almost beside the point, because our brains are in effect joined together into a single cognitive system that dwarfs all others. They are joined by an innovation that has invaded our brain and no others: language.”

A series of experiments directed by Sugata Mitra and his colleagues in India in the late 1990s and early 2000s, nicely illustrates the roles of curiosity, playfulness, and sociability in self-directed education. These researchers installed a total of 100 computers outdoors, mostly in very poor neighborhoods, including places where most of the children were unschooled and illiterate. In each case they told the children who gathered around that they could play with the installation, but told them nothing about what it could do or how to use it (Mitra, 2003, 2005; Mitra & Rana, 2001). Wherever the computers were installed, the same general results occurred. Children who had never previously seen a computer approached and explored the strange device. Apparently by accident, they discovered that they could move a pointer on the screen by moving their finger across a touch pad. This inevitably led to a series of further discoveries about what they could do with the computer, and each new discovery, made by one child or a group, was shared with others. Mitra estimates that for every computer he and his colleagues set up, roughly 300 children became computer literate within three months of the computer’s becoming available.

In many cases the children learned much more than how to use the computer. Some who could not read began to learn to read through their interactions with the computer, and those who could read sometimes found and downloaded articles that interested them, in the language in which they were literate (typically Hindi or Marathi). Children who were at an early stage of learning English learned many English words through their interactions with the computer and their talk with others about it. In one remote village, children who previously knew nothing about microorganisms learned about bacteria and viruses through their interactions with the computer and began to use this new knowledge appropriately in their conversations (Mitra & Dangwal, 2010). Mitra referred to the education he observed as *minimally invasive education*, education with the least possible adult intrusion into the children’s natural, self-chosen ways of living.

Mitra’s observations illustrate nicely how children’s curiosity, playfulness, and sociability combine to provide a powerful foundation for education. *Curiosity* drew the children to the computer and motivated them to manipulate it in various ways to learn about its properties. *Playfulness* motivated them to become skilled at using certain functions of the computer. For example, those who had already explored the Paint program and knew how to use it were motivated to play with that program, to paint many pictures, with the result that they became skilled at computer painting. Such play, in turn, often led to new discoveries, which renewed curiosity and led to new bouts of exploration. *Sociability* motivated children to explore and play together and to share their discoveries with one another. When one child made a discovery, such as that clicking on an icon would cause the screen to change, he or she would announce it excitedly to the others, and they, in turn, would try it out. Because of their sociability, each child’s discovery spread quickly through the whole group of children nearby; and then some child in that group, who had a friend in another group, might carry the new knowledge to that other group, where it again spread quickly, and so on, and so on. Each child’s discovery became the knowledge of many.

Unschooling: Home-Based Self-Directed Learning

Definition of Unschooling

The most common route to self-directed education today, as replacement for standard K–12 schooling, is that generally referred to as *unschooling*. For legal purposes, unschooling is a variety of homeschooling, but it differs from conventional homeschooling in that there is no imposed curriculum. Here is how unschooling was defined for purposes of a survey study of unschooling families in the United States (Gray & Riley, 2013):

Unschoolers do not send their children to school, and they do not do at home the kinds of things that are done at school. More specifically, they do not establish a curriculum for their children, they do not require their children to do particular assignments for the purpose of education, and they do not test their children to measure progress. Instead, they allow their children freedom to pursue their own interests and to learn, in their own ways, what they need to know to follow those interests. They also, in various ways, provide an environmental context and environmental support for the child's learning. Life and learning do not occur in a vacuum; they occur in the context of a cultural environment, and unschooling parents help define and bring the child into contact with that environment.

As noted earlier, the term *unschooling* was coined, in the 1970s, by educational critic and author John Holt, whose writings are still cited by many unschooling families as playing a key role in their decision to take this educational route (Gray & Riley, 2013). Holt provided guidance and encouragement for early unschooling families through his magazine *Growing without Schooling*. After his death in 1985, the magazine was continued, until 2001, with Patrick Farenga as editor. Today, a number of online magazines and newsletters are dedicated to unschooling, one of the most prominent being *Life Learning Magazine*, edited by Wendy Priesnitz.

Some in the unschooling movement, including Priesnitz (2016), prefer the term *life learning* to *unschooling*, because it emphasizes what learners do rather than what they don't do. Generally, people who take this educational path don't see education as separate from the rest of life. All of life involves learning, and the net, lasting, cumulative effect of such learning is education. Although it is not uncommon for unschoolers to take courses as part of their education—such as online courses or courses at a local library, community center, or community college—they do so only of their own free will, and they do not consider courses to be their primary route to education.

As there is no official registry of unschoolers, there is no way to know just how many there are. A common, semi-educated guess, made by people who organize homeschooling conferences in the United States, is that approximately 10% of children registered as homeschoolers are actually unschoolers (Gray & Riley, 2013). If this estimate is correct, then the number of unschooling children in the United States today is approximately 180,000, or about 0.34% of all U.S. school-aged children, as the most recent government statistics report the total number of homeschooled children to be about 1,800,000, or 3.4% of school-aged children (U.S. National Center for Education Statistics, 2015). If the definition of unschoolers were expanded to include *relaxed homeschoolers*, who are provided a loose curriculum at home with great flexibility for choice and little enforcement, the number would be much larger. Although the unschooling movement began in the United States, unschooling families can now be found throughout much of the world, although in many countries the practice must be carried on underground, because it is not a legal substitute for curriculum-based schooling. Unschooling advocate and author Sandra Dodd lists, on her website, unschooling networks in 19 nations (Dodd, 2016).

Unschooling Families and “Graduates” of Unschooling

Little formal research has been conducted of unschooling families and “graduates” of unschooling. What follows is a brief summary of all such research found in a recent systematic search.

Kirschner (2008) conducted an ethnographic study in which she visited 22 unschooling families near a city in the northeastern United States and repeatedly visited a subset of those families over a five-year period. Through qualitative analyses of her interviews and home observations, she described unschooling not just as an educational choice, but as a life choice. Unschoolers, as she saw them, were trying “to achieve an alternative way of being human, an alternative moral and social order of sorts.” As a group, they strove to live in nondominating harmony with one another and with nature. In addition to unschooling, their lifestyle commonly included attachment parenting, concern for the environment, natural foods, preference for homemade materials, and unhurried lives.

Using a method now known as netnography (Kozinets, 2015), Grunzke (2010) analyzed the content of online mothering chat groups and bulletin boards, supplemented by an online survey, to compare the viewpoints and lifestyles of unschooling mothers with those of conventional homeschooling and schooling mothers. She concluded that unschoolers in her sample were a cultural subgroup quite different from conventional homeschoolers. The unschooling mothers, on average, engaged in far more “alternative parenting tasks”—such as natural childbirth, no circumcising, having a family bed (co-sleeping with infants and young children), extended breast-feeding, babywearing, and preparing whole or organic foods—than did the conventional homeschooling mothers. In contrast, she found no statistically significant difference between the homeschooling and public schooling mothers in their frequency of performing such tasks. She concluded that, at least in terms of parenting practices, conventionally homeschooling mothers are more like public schooling mothers than like unschooling mothers.

In a smaller study, English (2014) interviewed 30 unschooling families in Australia, with findings quite consistent with those of Kirschner and Grunzke in the United States. Many of her unschooling families chose that route for education because it matched their attachment parenting philosophy.

Gray and Riley (2013) conducted a survey of 232 unschooling parents, mostly mothers and mostly in the United States, to learn about their paths to unschooling and their perceptions of its benefits and challenges. The participants were recruited through an announcement on websites frequented by unschoolers. The survey revealed that only 28% of these families started with unschooling, with their first child. The others all started with either conventional schooling or curriculum-based homeschooling, or both (in sequence), before switching to unschooling. Those who unschooled from the beginning seemed to be most like the unschoolers described by Kirschner, Grunzke, and English; for them, unschooling typically followed naturally from a lifestyle that included natural living and attachment parenting. This was less true for the other groups, who were more likely to choose unschooling because of their perceptions that their children were unhappy or failing to thrive in school or in curriculum-based homeschooling, and/or because of their perceptions of how much and how eagerly their children were learning on their own initiative, outside of schooling or homeschooling. Why, they asked, should they fight with their children to make them follow a curriculum when they were learning so well without one?

The most frequent benefits of unschooling reported by the whole sample in the survey included improved learning, better attitudes about learning, and improved psychological and social wellbeing for the children; and increased closeness, harmony, and freedom for the whole family, which derived from not having to follow a school-imposed schedule. The most frequent challenge expressed, by far, was that of overcoming feelings of criticism or social pressure—from neighbors, relatives, society in general, and their own school-ingrained ways thinking—that resulted from taking an educational path so different from the societal norm. They found it useful to communicate with other unschooling families, online and at conferences, in order to establish and maintain a new set of norms.

In a second study, Gray and Riley (2015), Riley and Gray (2015) surveyed 75 adults, over age 18, who had been unschoolers during at least what would otherwise have been their last two years of high school. These participants, too, were recruited through an online announcement on sites frequented by unschoolers. Twenty-four of the participants had been unschooled for all of what elsewhere would have been their K–12 years; another 27 had some schooling or curriculum-based homeschooling, but none after grade 6; and the remaining 24 had some schooling or curriculum-based homeschooling after 6th grade, but none in what would have been grades 11 and 12. Their age range was 18 through 49 years, with median age 24. They responded, in writing, to open-ended questions about their unschooling experiences, any formal higher education they had experienced following their unschooling (including how they gained admission and how they adapted to it), their current employment, their social life in childhood and in adulthood, the advantages and disadvantages they experienced from their unschooling, and their judgment as to whether or not they would unschool their own children.

Qualitative analyses of the responses led to the following conclusions: The great majority reported that they were very happy with their unschooling and would most likely unschool any children they might have, or were already unschooling their school-aged children. Nearly all valued the freedom unschooling gave them to pursue their own interest in their own ways, and many credited this childhood freedom as being a cause of their high levels self-motivation, self-direction, personal responsibility, and interest in learning. Most said they had satisfying social lives as unschoolers, and many commented on the special value of having friends of a wide range of ages, which they believed would not have occurred if they had been enrolled in school. Only three reported that they were, overall, unhappy with their unschooling, and those three all indicated that they had been socially isolated, in dysfunctional families, and that unschooling was not their own choice.

Sixty-two of the 75 respondents had gone on to some form of higher education, and 33 of these had either completed or were currently enrolled in a bachelor's degree program. Overall, they reported little difficulty getting into colleges and universities of their choice and adapting to the academic requirements there, despite not having the usual admissions credentials. One unexpected finding was that those who had been unschooled throughout their school-age years were more likely to go on to a bachelor's program than were those who had some schooling or curriculum-based homeschooling during those years. One common route to a bachelor's program was to take one or more community college courses, often while still of high-school age, and then use the community college transcript as part of their application. Many also reported that portfolios and interviews helped them gain admission.

Concerning careers, despite their young median age and the economic recession at the time, most reported that they were gainfully employed and financially independent. A high proportion of them (compared to the general population) had chosen careers in the creative arts (including writing and performing arts as well as visual arts); a high proportion were self-employed entrepreneurs; and a relatively high proportion, especially of the men, were in STEM careers. Most felt that their unschooling benefited them for higher education and careers by promoting their capacity to take charge of their own lives and learning. Many also described a natural transition from childhood play to adult employment; they found employment that made direct use of the passions and skills they had developed in play.

This study helps us understand how unschooling works when it works well, but, because the sample was self-selected, we cannot know how representative it is of unschoolers in general. At present it isn't possible to identify and study a random or normative sample of grown unschoolers, as there is no comprehensive registry or listing of them in the United States or elsewhere from which to draw. At minimum, however, the study shows that, at least for some, unschooling is quite compatible with a successful adult life in today's society.

Schools for Self-Directed Education

The Free School Movement of the 1960s and Early '70s

Many of the concepts that underlie unschooling today had their origins in the *free school movement* of the 1960s and early '70s, a period in which many dozens of radically alternative schools called *free schools* were started, in which students were free to choose their own activities and take charge of their own education. The history of this movement is well documented in a book by Miller (2002) and in an exceptionally well-researched undergraduate thesis by Hausman (1998). As Hausman points out, the free school movement was intimately tied to and part of the larger, anti-establishment Movement (with a capital M) of this time period. Concern about such issues as racial discrimination, poverty, and the escalating Vietnam War prompted high levels of political activism among young Americans and led many to question the morality of established institutions, including the school system.

Two books published in 1960—both of which became bestsellers—helped set the stage for the free school movement. One was Paul Goodman's *Growing up Absurd* and the other was A. S. Neill's *Summerhill: A Radical Approach to Child Rearing*. Goodman is credited with providing much of the intellectual foundation for the movement (Miller, 2002). In this book, and in his later book, *Compulsory Miseducation* (Goodman, 1964), Goodman contended that schools and the mass media were dehumanizing people. The focus on material wealth, superficial indices of achievement, and climbing the societal hierarchy or fitting cog-like into the economic machine were causing people to lose touch with their emotional, willful, creative, spontaneous, and authentically social human nature. Neill's book provided readers with a model of a school with very different goals and means from conventional schools, very much in keeping with the nonauthoritarian ways of life envisioned by Goodman.

Neill had founded a boarding school, called Summerhill, in the 1920s, where he was principal until his death in 1973. It still exists today, in Suffolk, England, now with Neill's daughter Zoe Readhead as principal. The book, *Summerhill*, was a collection of some of Neill's previous writings, published in the United States along with a strongly supportive forward by the well-known psychoanalyst and social critic Eric Fromm. At Summerhill, children were largely free to do what they wanted, study or not study, and they were involved in the school's governance through school-wide meetings. Neill was far more concerned with children's happiness and healthy emotional development than with their academic achievement. The book sold hundreds of thousands of copies in the 1960s, and by 1970 it reportedly was assigned reading in approximately 600 university courses (Miller, 2002).

Soon after the publication of Neill's book, the Summerhill Society was formed in the United States, which published a bulletin that disseminated ideas and information supportive of freedom in education. New, little private schools, referred to generally as *free schools*, began to sprout up throughout the US. The schools in many ways emulated Summerhill, though they were day schools, not boarding schools. They were places for children to play, explore, roughhouse if they chose, and take courses if they wanted to.

It's impossible to know just how many of these schools were created, because they didn't all register with a central network. However, a count of schools that were listed in the *New Schools Exchange Directory*, compiled by Hausman (1998), reveals a remarkably rapid rise and fall of the number of such schools: from zero prior to 1964, to 50 in 1968, to about 320 in 1971; and then falling to about 240 in 1972, about 140 in 1975, about 55 in 1978. Most of the schools were small, typically between 15 and 60 students; and their average lifespan was about three years. The total enrollment in such schools, at the peak of the movement in 1971, is estimated to be only about 10,000 students (Miller, 2002). So, in terms of students served, the free school

movement was always small, much smaller than the number of children in unschooling families today.

On the basis of interviews of 17 people who had been intimately involved in the free school movement, Hausman (1998) described a number of interrelated reasons for the movement's rapid decline in the 1970s. A major cause was the decline in the larger anti-establishment Movement, as American society shifted toward more conservative values. Another was lack of money. Public funding was not available for such radically different schools; and the schools charged very low tuitions, partly because of the egalitarian desire to include students from poor families and partly because people who could afford high tuitions were rarely interested in sending their children to such anti-establishment (or at least nonestablishment) schools. The idealists who had founded the schools and operated them for little or no pay discovered, as time went on, that they needed to make a living, so they left for other jobs and the schools collapsed. Personality differences and disagreements among and between the staff members and parents also led to the demise of many schools. Most of the schools had established no clear means to make decisions when consensus couldn't be reached, which led to partings of ways and the collapse of schools. Some schools survived but were compromised in such a way that they could no longer be classed as free schools, when new parents and staff members pushed for and instituted changes that reduced children's freedom and made the schools more like conventional progressive schools.

Today, as far as can be known, only two of the schools that were founded in the heyday of the free school movement in the United States still exist with their philosophy intact. One is the Albany Free School, founded in 1969, and the other is the Sudbury Valley School, founded in 1968. Summerhill, too, still exists, now only a few years from a centennial celebration (it has approximately 70 students). All three of these schools have survived because of committed founders, who stuck with the school through difficult times, and because they found ways to bring in enough money to pay staff members and developed clear decision-making procedures that involve students and staff but not parents. Parents at these successful schools have the power to enroll or remove their child, but do not have power to alter the way the school operates.

Although the free school movement died out, its legacies remain. One legacy is the rise in unschooling. It is interesting to note that John Holt's earliest writings supported school reforms and free schools, but by the early 1970s he was advocating homeschooling and unschooling. His writings both reflected and helped to cause the shift from free schooling to unschooling. Much of the pedagogical philosophy and language of the free school movement can be found today in the writings and speeches of unschooling advocates. Another legacy is the rise of *democratic schools*, of which Sudbury Valley and Summerhill are leading exemplars.

Sudbury Valley and Other Democratic Schools

The founders of the Sudbury Valley School never embraced the term *free school*, because to them the term connoted anarchy and lack of a formal governing system. They were less inspired by Goodman and other radicals who believed that problems and disagreements could be worked out organically and spontaneously in a free environment, and more inspired by basic ideals of American democracy (Greenberg, 1970). They believed that institutions work best when governed by the people they are supposed to serve, and so they designed a school governed by its students. Sudbury Valley is, essentially, a democratic community, in which students, who range in age from four through high-school age, are accorded the full rights and responsibilities of democratic citizenry. The leading philosopher among the group of founders was and is Daniel Greenberg, who to this day remains as one of the school's most active staff members and the most prolific exponent of its philosophy.

Sudbury Valley is housed in a large Victorian farmhouse and remodeled barn on ten acres of land in a semirural area in Framingham, Massachusetts. It admits students without regard to any measures of academic performance and operates at a per-pupil cost about half that of the surrounding public schools, but high enough to pay its staff members a salary comparable to that

of other private schools. The school currently has approximately 170 students and seven adult staff members. It is governed by the School Meeting, which includes all students and staff members, at which each person, regardless of age, has a vote. This body, led by an elected student chairperson, meets once a week and, following Roberts Rules of Order, legislates all rules of behavior and establishes committees to oversee the school's day-to-day operations. The rules are enforced by a Judicial Committee—modeled after the jury system of our larger society—which, at any given time, includes one staff member and several students who typically span the age range of students at the school. Most remarkably, the School Meeting also hires and fires the staff. All staff members are on one-year contracts, which must be renewed each year by a process that includes a secret-ballot election. Greenberg and two other founding members have survived this process, year after year, for what is now almost half a century; but many others have come and gone over the years, some of whom were voted out. (For a discussion of how all this works from a parent's perspective, see Traxler, 2015.)

The educational philosophy of the school is essentially the same as that of a hunter-gatherer band. The assumption is that if young people have ample opportunity to play, explore, and follow their own interests, in an environment rich in educational opportunities, they will learn what they must for adult success. The school gives no tests and does not in any way evaluate students' progress. There is no curriculum and no attempt by staff members to motivate learning. Courses occur only when a group of students takes the initiative to organize one, and then the course lasts only as long as the students want it to last. Many students never join a course. The staff members do not consider themselves to be "teachers." They are, instead, the adult members of the community. They are the more mature and often more persuasive voices at school meetings, the people that students go to with problems that other students can't help them with, the ones most often designated by the school meeting to carry out administrative tasks, and the interface between the school and the larger community. Most of their "teaching" is of the same variety as can be found in any human setting and similar to the ways in which students teach one another at the school, through naturally occurring conversations and by responding naturally to questions and requests for help.

Gray (2016) has contended that the Sudbury Valley School works well as a setting for self-directed education because it provides, for our time and place, educational conditions that are similar to those of a hunter-gatherer band. These include (1) the social expectation that education is children's responsibility (which becomes a self-fulfilling prophecy); (2) unlimited freedom to play, explore, contemplate, and pursue one's own interests; (3) access to the tools of the culture and opportunity to play with those tools (use them in creative, self-directed ways); (4) access to a variety of adults, who are helpers, not judges (people are more ready to seek help from someone who does not judge them than from someone who does); (5) free age mixing among children and adolescents (younger students acquire advanced skills and knowledge by observing and interacting with older ones, and older students develop leadership and nurturing abilities by interacting with younger one); and (6) immersion in a stable, moral, democratic community (which helps students acquire a sense of responsibility for the community as a whole, not just for themselves).

Greenberg (1992) has long claimed that free age mixing is the key to learning at Sudbury Valley, and research tends to bear that out. A quantitative study that took place over several days revealed that more than half of the naturally occurring interactions among students at the school involved students who were more than 28 months apart in age, and a full 25% of them involved students who were more than 48 months apart (Gray & Feldman, 1997). In a subsequent, long-term observational study, Gray and Feldman (2004) identified many ways by which older children boosted younger ones into higher realms of physical and intellectual activity, and taught them new skills and concepts, in their naturally occurring age-mixed interactions, and also identified ways in which older children practiced nurturing, leading, and natural teaching in interactions with younger ones. (For a general review of research on the educational value of mixed-age groupings, see Gray, 2011b.)

Many schools have emerged, since the founding of Sudbury Valley, that are explicitly modeled after that school and are informally referred to as "Sudbury schools." Although there is no official definition or list of such schools, and Sudbury Valley

itself rejects the idea of such a definition and list, Wikipedia (2016) currently identifies 34 such schools in the United States and 13 in other countries, and names another nine such schools as “in development.” Many of these schools are very small, struggling to attract enough students to be financially viable, but others are well established and some rival Sudbury Valley in number of students.

Sudbury Valley and the schools closely modeled after it are the most pristine exemplars of democratic schooling. These are the schools that most fully involve students in school governance and where staff members most fully leave students to choose and direct their own activities. Many other schools that call themselves democratic schools bear similarities to Sudbury schools in these respects, but do not go as far. Summerhill, for example, seems to offer as much freedom as it legally can, but UK educational policy requires the school to offer a standard set of courses and give state-required exams. The school doesn't require students to attend classes, but the mere presence of classes and tests, which the students didn't request, would seem to establish implicit if not explicit educational expectations. The Alternative Education Resources Organization (2016) lists approximately 250 democratic schools worldwide, broadly defined, although it is not clear that all of them are currently operating. These schools vary widely in their degree of democratic governance and degree of educational free choice. Many of these schools are age-graded, like standard schools, so they lack the advantage of free age-mixing.

Israel, in addition to having three Sudbury model schools, has approximately 25 other schools that are officially labeled by the government as “democratic schools” and that receive at least some public funding. The largest is Hadera, with over 400 students. In these schools, students have a significant voice in creating school rules and more control over what and how they learn than do students in standard schools, but they nevertheless must follow the outlines of a state-imposed curriculum and take courses where teachers are ultimately in charge. Some evidence for the value of the greater choice and sense of freedom in Israel's democratic schools, compared with their standard public schools, is found in a study that assessed students' level of interest in science, in grades five through eight, in the two types of schools (Vedder-Weiss & Fortus, 2011). The researchers found that interest declined from grade to grade in the standard schools, which is consistent with results of other studies, conducted elsewhere, showing that interest in academic subjects generally, but especially in science, declines with years in school (e.g., Eccles, Wigfield, Midgley, Reuman, MacIver, & Feldlaufer, 1993; Lepper, Corpus, & Iyengar, 2005; Osborne, Simon, & Collins, 2003). In the democratic schools, however, interest in science did not decline, but tended to increase. By eighth grade, students' interest was substantially and significantly greater in the democratic schools than in the standard ones. The result is consistent with the claims of advocates of self-directed education that standard schooling dampens curiosity while self-directed education does not.

Evidence of growing worldwide interest in democratic schooling is documented on the website of the International Democratic Education Network (IDEN, 2016). The first International Democratic Education Conference (IDEC) was held in Israel, in 1993, with representatives from a small number of schools. Since then, IDEC has been held annually, in a different country each year, with, in recent years, hundreds of attendees from 30 or more different countries. There are also now annual conferences held by the European Democratic Education Community (EUDEC) and the Australian Democratic Education Community (ADEC). In 2016, the first ever conference of the Asia Pacific Democratic Education Community (APDEC) was held, in Taiwan, with representatives from Taiwan, Japan, Malaysia, Korea, the Philippines, Hong Kong, and India. For more about these organizations and conferences, see websites at eudec.org, adec.edu.au, and apdec.org.

Follow-up Studies of Summerhill and Sudbury Valley Students

In the mid-1960s, Emmanuel Bernstein located 50 former students of Summerhill who were living in and around London and interviewed them in their homes. In an informal, discursive report on these interviews, he concluded (Bernstein, 1968, pp. 131–134):

The majority of Summerhillians had only one major complaint against the school: the lack of academic opportunity and inspiration along with the lack of inspired teachers. . . . Throughout my visits I was to find Summerhill homes filled with warmth and responsive understanding; they were happy, communicative families. . . . My feelings were mainly positive. Almost all of its former students were working; raising responsive children; enjoying life. And the group who returned to the regular state schools were so enthusiastic about learning that they caught up with the others within a year.

These former students occupied a wide range of careers and some had jobs that obviously required a good deal of advanced education after leaving Summerhill (there were two physicians, two lawyers, a zoologist, and a university professor in the group).

More recently, Lucas (2011) published a book based on extensive interviews of 15 former Summerhill students, who had been at the school at different periods over its then 90-year history. The book is more a history of the school and set of selected autobiographies than a systematic study of former students, but the pictures of the interviewees that emerge are quite consistent with Bernstein's earlier conclusions. What these former students valued most was the independence and adaptability the school fostered in them, and their life stories showed how these characteristics had served them well.

In 1983, when Sudbury Valley was smaller than it now is and had been in existence for 15 years, Gray and Chanoff (1986) conducted a follow-up study of the school's graduates. The school's directory listed 82 former students who met the researchers' definition of graduates—people who had been students at the school for at least two years and had left at age 16 or older with no plans for further secondary education. They located 76 of those graduates and 69 of them completed and returned the rather extensive survey questionnaire (a response rate of 91% of those who could be located, or 84% of the total). The questionnaire asked about their activities when they were students at the school, their subsequent education and employment after leaving Sudbury Valley, and how their attendance at such an unusual school may have handicapped or benefited them in their post-graduate life.

Overall, those who had pursued higher education (about 75 per cent of the total) reported no particular difficulties getting into the school of their choice or adapting to the academic requirements. This was true for those who had been at Sudbury Valley for most or all of what would elsewhere have been their K–12 years, as well as for those who had been there for shorter periods. They were pursuing a wide variety of occupations, including business, arts, science, medicine, other service professions, and skilled trades. Many of the graduates were pursuing careers that were direct extensions of activities they had played at as children. For example, one graduate, who had devoted much time to creating dolls' clothes and then her own clothes when she was at the school, had become a pattern maker in the high-fashion industry. Another, who had played extensively with boats as a young girl, was now a ship captain. Another, who had devoted countless hours to creating miniature clay models and tinkering with mechanical devices, had become a machinist and inventor. Those who had become professional musicians, artists, or computer specialists all had developed the relevant passions and skills in their freely chosen activities at the school.

Most of the graduates said that a major benefit of their Sudbury Valley education was the high sense of personal responsibility and self-control, and continued motivation to learn, that the school fostered. A few said they had felt somewhat handicapped, academically, when they started college, but were able to make up their perceived deficiencies quickly. In response to a final question, none said they regretted having gone to Sudbury Valley rather than a more traditional school.

Subsequent to Gray and Chanoff's study, the school itself conducted two more studies of former students and published them as books (Greenberg & Sadofsky, 1992; Greenberg, Sadofsky, & Lempka, 2005). The second of these is most relevant for understanding the effectiveness of a Sudbury Valley education, as it focused exclusively on those who had been students at the

school for at least what would elsewhere have been their last three years of high school and who had been out of the school for at least four years. The school records indicated that a total of 199 former students met these criteria, and the researchers managed to locate and interview 119 (60%) of them. The interviewer was a person who was not associated with the school and was previously unknown to the graduates, and the questions focused on a wide range of their experiences since leaving the school. Among the findings were the following:

Eighty-one (68%) of these graduates had enrolled in four-year colleges at some point after graduation, and an additional 11 had pursued some other form of education. Most who went on to college reported no unusual difficulty getting into the school of their choice. Most who went to college reported that they were very satisfied with their college experiences. Some, however, said they had difficulty adapting, at first, to the deadlines and requirements, and some complained that the rigid requirements, hierarchical structure, and immature classmates at college made their educational experience less than it could have been.

This study, like the earlier one by Chanoff and Gray, revealed that the graduates had gone on to a wide variety of jobs and careers. Relative to the general population, particularly high proportions of them had gone on in the fields of arts and design, community and social services, and computers and math. In response to the question of why they had chosen the line of work they were in, 65% talked about their passion for and enjoyment of the work, and 42% talked about the value of serving others. Other questions revealed that the graduates generally saw their primary personal strengths as responsibility, self-confidence, commitment, ability to relate well to others, and self-control over their own lives. Consistent with the democratic nature of Sudbury Valley, an analysis of their discussions about personal values indicated highest ranking for what the researchers referred to as “American values,” but what might better be called “democratic values,” including egalitarianism, freedom, respect/tolerance, responsibility, and the rights of individuals.

Directions for Further Research

This final section presents three broad interrelated questions, or sets of questions, that could guide further research: (1) Would self-directed education succeed for the majority of people, if it were available to them? (2) How does self-directed education work, and what are the environmental conditions that optimize its effectiveness? Most especially, how do self-directed learners acquire the literacy and numeracy skills that are seen as “basics” in our standard school system? (3) What are the long-term psychological consequences of greater freedom in childhood? Put differently, how does the experience of having responsibility and freedom to direct one’s own education affect a person’s character and outlook on life? None of these questions will have simple answers. The answers will necessarily be nuanced and contingent, and an aim of research should be to understand some of the nuances and contingencies.

The first question is most directly relevant to educational policy. At present, in many countries, Sudbury model schools and unschooling are illegal, because they do not satisfy government criteria for adequate education. That is technically true even in many states in the United States, though people with sufficient resources and determination have managed to find ways to get past the legal roadblocks. The underlying societal assumption is that, without curriculum-based schooling, many people would grow up lacking the skills required to support themselves and contribute meaningfully to the society as a whole, so all children must be compelled to go through such schooling.

Unschooling and democratic schooling present special challenges to policy makers, because there is no short-term way to assess their effectiveness. With standard schooling, assessment is generally conducted with standardized test. If tests reveal that students have learned what they are supposed to learn at their age and grade level, as dictated by the curriculum, then the

schooling is deemed successful. But when there is no imposed curriculum, this method is senseless. A fundamental premise of self-directed education is that different people will learn different things, and to the degree that they learn the same things they will learn them at different times, so there can be no standardized testing.

A research study by Martin-Chang, Gould, and Meuse (2011), in Canada, illustrates this problem. These researchers set out to compare homeschooling children with a demographically similar group of public school children, ages five to ten, on standardized academic tests. As part of the study, they interviewed mothers of the homeschoolers about their homeschooling methods and found that 12 of them described their methods as very relaxed and unstructured and nine in that group used the term *unschooling* in describing their method. As something of an afterthought, they decided to separate these 12 from the other homeschoolers and treat them as a separate group. They found that the “structured homeschoolers” significantly outperformed the traditionally schooled group on all of the academic tests, but the “unstructured homeschoolers” scored significantly lower than structured homeschoolers, and also lower than the traditionally schooled group (but this difference not statistically significant). This study was interpreted by some, in the popular press, as evidence for structured homeschooling and against unschooling, but that is certainly a misinterpretation. It should be no surprise to anyone that children, age five to ten, who have been studying a standard school curriculum would perform better on tests of that curriculum than those who have not been studying it. The unschoolers may well have been learning other lessons, equally or even more important to the long run of their lives, but these were not on the test. The largest gap between the unstructured group and the structured group was in reading. Informal surveys have revealed that unschooled children often don’t learn to read until several years later than the standard school age for reading, but then become highly proficient readers, quite quickly, once they develop an interest (Gray, 2010A). It seems quite likely that at least some of the “unstructured” children in the Martin-Chang et al. (2011) study would not yet have begun to read.

Any real assessment of the effectiveness of self-directed learning would have to take a longer and broader view. How do people educated in this way adapt to the realities of life? Are they able to support themselves as adults? If they wish to go to college, are they able to gain admission into college and benefit from the education there? Are they happy? Do they contribute in valuable ways to the larger society? Perhaps even more a propos, how do they define success in life and what steps are they taking to achieve that? The follow-up studies of Sudbury Valley and Summerhill students, and of unschoolers, are a start in answering such questions, but it would be useful to conduct such studies with broader samples and to compare results for people from various backgrounds. Some of the newer Sudbury model schools (e.g., the Philly Free School) are providing scholarships for inner city children whose families can’t afford tuition, and it would be valuable, as time goes on, to follow that population into adulthood.

The second question, about how self-directed education works, could be addressed through systematic observational and interview studies of self-directed learners. Gray and Feldman’s (2004) study of the learning opportunities occurring in age-mixed interactions at Sudbury Valley is one step in that direction. Many parents contemplating self-directed education for their children worry that they may not learn to read, write, or calculate with numbers. Informal surveys indicate that essentially all self-directed learners acquire these skills, but do so at a wide range of ages and in a wide range of ways (Gray, 2010A, 2010B). Sometimes they ask for and receive direct instruction (usually only a little of it), but more often they seem to pick up these skills in the course of everyday experience in a literate and numerate social environment. Systematic studies could lead to greater understanding of how self-directed learners acquire the three Rs and the conditions that facilitate such acquisition.

The third question begs researchers to think of education as something much broader than acquisition of the kinds of skills and knowledge that constitute a typical school curriculum. How do young people learn to take responsibility for themselves? How do they learn to control their emotions, to think critically or creatively, to get along well with other people? How do they acquire values and learn to guide their lives in accordance with those values? These are the kinds of qualities that grown unschoolers

and Sudbury schoolers wrote or talked about most often in response to questions about what they gained from their unschooling experience. These qualities cannot be taught; they can only be acquired in self-directed ways. It may well be that the freedom, including the opportunities for reflection and self-examination, that is part and parcel of self-directed education tends to optimize these aspects of development.

A considerable body of research, not generally thought of as having to do with self-directed education, has shown positive developmental correlates of autonomy. A number of studies have shown that increased autonomy in childhood is predictive of heightened creativity, satisfying interpersonal relationships, and increased psychological well-being and resilience (reviewed by Ryan, Deci, Grolnick, & La Guardia, 2006). In a classic longitudinal study, children whose parents allowed them more freedom at home were subsequently judged by teachers, in grades 6 and 9, to be more creative, resourceful, curious, independent, and confident than children who had experienced less freedom at home (Harrington, Block, & Block, 1987). More recently, a correlational study revealed that young children who were permitted more time by their parents to do as they chose rather than engage in adult-structured activities, performed better on a test of self-directed executive functioning—a test that had previously been shown to predict future real-life problem-solving ability—than those who had less free time (Barker, Semenov, Michaelson, Provan, Snyder, & Munakata, 2014). Ideas about development that derive from research of this sort could be expanded in studies of children taking paths of self-directed education.

References

Alternative Education Resources Association (2016). **Democratic schools**.

Aristotle. (1963 translation). *Metaphysica*, liber A. (D. E. Gershenson & D. A. Greenberg, Trans.). *Natural Philosopher*, 2, 3–55.

[+] Find this resource:

Barker, J. E., Semenov, A. D., Michaelson, L., Provan, L. S., Snyder, R., & Munakata, Y. (2014). Less-structured time in children's daily lives predicts self-directed executive functioning. *Frontiers in Psychology*, 5, 1–16.

[+] Find this resource:

Bernstein, E. (1968). Summerhill: A follow-up study of its students. *Journal of Humanistic Psychology*, 8, 123–136.

[+] Find this resource:

Bonawitz, E., Shafto, P., Gweon, H., Goodman, N. D., Spelke, E., & Schulz, L. (2011). The double-edged sword of pedagogy: Teaching limits children's spontaneous exploration and discovery. *Cognition*, 120, 322–330.

[+] Find this resource:

Dennett, D. C. (1994). Language and intelligence. In J. Khalfa (Ed.), *What is intelligence?* (pp. 161–178). Cambridge: Cambridge University Press.

[+] Find this resource:

Dodd, S. (2016). **Unschooling the world**. Accessed October 21, 2016.

Draper, P. (1976). Social and economic constraints on child life among the !Kung. In R. B. Lee & I. DeVore (Eds.), *Kalahari hunter-gatherers: Studies of the !Kung San and their neighbors* (pp. 199–217). Cambridge, MA: Harvard University Press.

[+] Find this resource:

Eccles, J. S., Wigfield, A., Midgley, C., Reuman, D., MacIver, D., & Feldlaufer, H. (1993). Negative effects of traditional middle schools on students' motivation. *Elementary School Journal*, 93, 553–574.

[+] Find this resource:

English, R. (2014). Too cool for homeschool? Accessing underground unschoolers with Web 2.0. In K. Trimmer, A. Black, & S. Riddle (Eds.), *Mainstreams, margins and the spaces in-between: New possibilities for education research* (pp. 112–124). London: Routledge.

[+] Find this resource:

Farenga, P. L., & Ricci, C. (2013). *The legacy of John Holt: A man who genuinely understood, respected, and trusted children*. Medford, MA: HoltGWS.

[+] Find this resource:

Goodman, P. (1960). *Growing up absurd*. New York: Vintage.

[+] Find this resource:

Goodman, P. (1964). *Compulsory miseducation*. New York: Vintage.

[+] Find this resource:

Gosso, Y., Otta, E., de Lima, M., Ribeiro, F., & Bussab, V. (2005). Play in hunter-gatherer societies. In A. D. Pellegrini & P. K. Smith (Eds.), *The nature of play: Great apes and humans* (pp. 213–253). New York: Guilford.

[+] Find this resource:

Gray, P. (2009). Play as the foundation for hunter-gatherer social existence. *American Journal of Play*, 1, 476–522.

[+] Find this resource:

Gray, P. (2010a, February 24). **Children teach themselves to read**. *Freedom to Learn* blog, *Psychology Today*.

[+] Find this resource:

Gray, P. (2010b, April 15). **Kids learn math easily when they control their own learning**. *Freedom to Learn* blog, *Psychology Today*.

[+] Find this resource:

Gray, P. (2011a). The evolutionary biology of education: How our hunter-gatherer educative instincts could form the basis for education today. *Evolution: Education and Outreach*, 4, 28–40.

[+] Find this resource:

Gray, P. (2011b). The special value of children's age-mixed play. *American Journal of Play*, 3, 500–522.

[+] Find this resource:

Gray, P. (2013). *Free to learn: Why releasing the instinct to play will make our children happier, more self-reliant, and better students for life*. New York: Basic Books.

[+] Find this resource:

Gray, P. (2016). Children's natural ways of educating themselves still work—even for the three Rs. In D. C. Geary & D. B. Berch (Eds.), *Evolutionary perspectives on child development and education* (pp. 67–94). New York: Springer.

[+] Find this resource:

Gray, P., & Chanoff, D. (1986). Democratic schooling: What happens to young people who have charge of their own education? *American Journal of Education*, 94, 182–213.

[+] Find this resource:

Gray, P., & Feldman, J. (1997). Patterns of age mixing and gender mixing among children and adolescents at an ungraded democratic school. *Merrill-Palmer Quarterly*, 43, 67–86.

[+] Find this resource:

Gray, P., & Feldman, J. (2004). Playing in the zone of proximal development: Qualities of self-directed age mixing between adolescents and young children at a democratic school. *American Journal of Education*, 110, 108–145.

[+] Find this resource:

Gray, P., & Riley, G. (2013). The challenges and benefits of unschooling according to 232 families who have chosen that route. *Journal of Unschooling and Alternative Learning*, 7, 1–27.

[+] Find this resource:

Gray, P., & Riley, G. (2015). Grown unschoolers' evaluations of their unschooling experiences: Report I on a survey of 75 unschooled adults. *Other Education*, 4, 8032.

[+] Find this resource:

Greenberg, D. (1970). *Crisis in American education: An analysis and a proposal*. Framingham, MA: Sudbury Valley School press.

[+] Find this resource:

Greenberg, D. (1992). Sudbury Valley's secret weapon: Allowing people of different ages to mix freely at the school. In D. Greenberg (Ed.), *The Sudbury Valley School experience* (3d ed., pp. 121–136). Framingham, MA: Sudbury Valley School Press.

[+] Find this resource:

Greenberg, D., & Sadofsky, M. (1992). *Legacy of trust: Life after the Sudbury Valley School experience*. Framingham, MA: Sudbury Valley School Press.

[+] Find this resource:

Greenberg, D., Sadofsky, M., & Lempka, J. (2005). *The pursuit of happiness: The lives of Sudbury Valley alumni*. Framingham, MA: Sudbury Valley School Press.

[+] Find this resource:

Groos K. (1898). *The play of animals*. New York: Appleton.

[+] Find this resource:

Groos K. (1901). *The play of man*. New York: Appleton.

[+] Find this resource:

Grunzke, R. Z. (2010). *Pedagogues for a new age: Childrearing practices of unschooling parents* (PhD diss.). University of Florida. Ann Arbor, MI: Proquest LLC.

[+] Find this resource:

Harrington, D. M., Block, J. H., & Block, J. (1987). Testing aspects of Carl Rogers's theory of creative environments: Child-

rearing antecedents of creative potential in young adolescents. *Journal of Personality and Social Psychology*, 52, 851–856.

[+] Find this resource:

Hausman, T. (1998). *A history of the free school movement* (Undergraduate thesis). Department of Education, Brown University.

[+] Find this resource:

Hewlett B., Fouts, H., Boyette, A., & Hewlett, B. L. (2011). Social learning among Congo Basin hunter-gatherers. *Philosophical Transactions of the Royal Society B*, 366, 1168–1178.

[+] Find this resource:

Holt, L. L., Smeltzer, B. C., Brockett, R. G., Shih, C. K., & Kirk, J. M. (2013). Emerging scholars in self-directed learning: A further examination of IJSDL citation analysis data. *International Journal of Self-Directed Learning*, 10, 38–51.

[+] Find this resource:

Kirschner, D. H. (2008). *Producing unschoolers: Learning through living in a U.S. education movement* (PhD diss.). University of Pennsylvania.

[+] Find this resource:

Konner, M. (2002). *The tangled wing: Biological constraints on the human condition, revised edition*. New York: Holt.

[+] Find this resource:

Kozinets, R. V. (2015). *Netnography redefined* (2d ed.). Los Angeles: SAGE.

[+] Find this resource:

Lancy, D. F., Bock, J., & Gaskins, S. (2010). Putting learning into context. In D. F. Lancy, J. Bock, & S. Gaskins (Eds.), *The anthropology of learning in childhood* (pp. 3–10). Lanham, MD: AltaMira.

[+] Find this resource:

Lepper, M. R., Corpus, J. H., & Iyengar, S. S. (2005). Intrinsic and extrinsic motivational orientations in the classroom: Age differences and academic correlates. *Journal of Educational Psychology*, 97, 184–196.

[+] Find this resource:

Lucas, H. (2011). *After Summerhill*. Bristol, U.K.: Herbert Adler.

[+] Find this resource:

Martin-Chang, S., Gould, O. N., & Meuse, R. E. (2011). The impact of schooling on academic achievement: Evidence from homeschooled and traditionally schooled students. *Canadian Journal of Behavioral Science*, 43, 195–202.

[+] Find this resource:

Miller, R. (2002). *Free schools, free people: Education and democracy after the 1960s*. Albany: State University of NY Press.

[+] Find this resource:

Mitra, S. (2003). Minimally invasive education: A progress report on the “hole-in-the-wall” experiments. *British Journal of Educational Technology*, 34, 367–371.

[+] Find this resource:

Mitra, S. (2005). Self-organizing systems for mass computer literacy: Findings from the “Hole in the wall” experiments.

International Journal of Development Issues, 4, 71–81.

[+] Find this resource:

Mitra, S., & Dangwal, R. (2010). Limits to self-organising systems of learning: The Kalikuppam experiment. *British Journal of Educational Technology*, 41, 672–688.

[+] Find this resource:

Mitra, S., & Rana, V. (2001). Children and the Internet: Experiments with minimally invasive education in India. *British Journal of Educational Technology*, 32, 221–232.

[+] Find this resource:

Mulhern, J. (1959). *A history of education: A social interpretation* (2d ed). New York: Ronald.

[+] Find this resource:

Neill, A. S. (1960). *Summerhill: A radical approach to child rearing*. New York: Hart.

[+] Find this resource:

Osborne, J. A., Simon, S. B., & Collins, S. (2003). Attitudes towards science: A review of the literature and its implications. *International Journal of Science Education*, 25, 1049–1079.

[+] Find this resource:

Priesnitz, W. (2016). **The words we use: Living as if school doesn't exist.** *Life Learning Magazine*.

[+] Find this resource:

Renner, M. J. (1988). Learning during exploration: The role of behavioral topography during exploration in determining subsequent adaptive behavior. *International Journal of Comparative Psychology*, 2, 43–56.

[+] Find this resource:

Riley, G., & Gray, P. (2015). Grown unschoolers' experiences with higher education and employment: Report II on a survey of 75 unschooled adults. *Other Education*, 4, 33–53.

[+] Find this resource:

Ryan, R. M., Deci, E. L., Grolnick, W. S., & La Guardia, J. G. (2006). The significance of autonomy and autonomy support in psychological development and psychopathology. In D. Cicchetti & D. Cohen (Eds.), *Developmental psychopathology: Vol. 1. Theory and methods* (2d ed., pp. 795–849). New York: Wiley.

[+] Find this resource:

Schulz, L. E., & Bonawitz, E. G. (2007). Serious fun: Preschoolers engage in more exploratory play when evidence is confounded. *Developmental Psychology*, 43, 1045–1050.

[+] Find this resource:

Traxler, C. R. (2015). The most democratic school of them all: Why the Sudbury model of education should be taken seriously. *Schools: Studies in Education*, 12, 271–296.

[+] Find this resource:

United Kingdom Government (2016). **Types of school.**

U.S. National Center for Education Statistics (2015). *Parent and family involvement in education from the National Household*

Education Survey Program of 2012, Washington, DC: U.S. Department of Education.

[+] Find this resource:

Vedder-Weiss, D., & Fortus, D. (2011). Adolescents' declining motivation to learn science: Inevitable or not? *Journal of Research in Science Teaching*, 48, 199–216.

[+] Find this resource:

Wikipedia (2016). List of Sudbury schools.

[+] Find this resource:

Williams, H. D. (1930). Experiment in self-directed education. *School and Society*, 31, 715–718.

[+] Find this resource: