

Recent Educational Research Tells Waldorf: "You Have Got it Right!"

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WRITING AND ART COMBINE TO DEEPEN RETENTION AND UNDERSTANDING

For almost a century, Waldorf schools have been using the curriculum and pedagogy set forth by Rudolf Steiner when he founded the first Waldorf school in Stuttgart, Germany, in 1919. Only in the past few decades, however, has physiological and pedagogical scientific

research confirmed the validity of Waldorf Education in a clear and compelling way.

Although students are usually quite happy attending Waldorf schools, parents often have questions about an educational approach that differs in many ways from conventional, mainstream education. This article, which includes many references and citations, brings together recent scientific research that supports the principles and practices of Waldorf Education and will, it is hoped, allay parental anxiety and doubts. The references in parentheses refer to published sources listed at the end of the article.

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Building Brain Cells

As children grow, their brains grow along with the rest of their body. A larger brain capacity offers larger opportunities for registering and processing information. Research has shown that there are five ways to increase brain cell numbers (Begley 1996, Hancock 1996. See also Chugani 2011). These ways are: music, art, handwork, movement, and personal connections to adults. All of these ways are strongly represented in Waldorf Education.

Music

We all know that Einstein played the violin. Whether this influenced his intelligence is anyone's guess. However several research projects have shown the positive influence of musical experience on learning. Musical training stimulates brain development (First Evidence, 2006; Kingsbury, Overy, Woo 2005). And comparison studies in schools have demonstrated that students who had music classes did better on math than those who did not, even if the music classes replaced some of the math classes. The musical students also scored better in foreign languages and were noticeably more socially conscious (Stokes 2002, Uhlig 1999).

Music plays a significant role in Waldorf schools from grade one through high school. All students learn to play recorder in first grade and are encouraged to take up an orchestral instrument, especially the violin. Students in neighboring classes play together in orchestras. Vocal music is also introduced already in grade one, with the complexity of choral and solo material increasing by age level. By high school, students are often presenting musical dramas, from Mozart's *The Magic Flute* to modern musicals. Monthly or bimonthly assemblies for parents give students opportunities to perform for parents and peers. There may also be evening recitals.

Art

Specific pedagogical studies have verified the positive relationship between art and academic achievement (Gardiner et al 1996).

In Waldorf schools there is a strong presence of the visual arts: painting, drawing, sculpture. In first grade, students are introduced to water colors used in both abstract and representational art. Crayons and colored pencils are also used by students to construct their own "main lesson books," in which they depict and describe the main stories or concepts of the content of the main lessons. An artistic approach to all subjects, including mathematics, helps to connect the more intellectual with feeling life. Sculpture is also part of the curriculum, culminating in stone carving in twelfth grade.



GRADE 7 PASTEL DRAWING

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Handwork

Fine motor movements are now recognized as contributing to intelligence and school success (Gardiner et al, 1996; Auer, AWSNA).

In Waldorf schools handwork begins in first grade and continues through high school, with ever more challenging projects. First graders knit recorder cases for their first musical instruments. Later they advance to weaving, also learn to make yarn from raw wool and then design and make their own clothing. There is also handwork in other media, including woodwork and metal work. As children



KNITTING PROJECT FROM HANDWORK CLASS DEVELOPS FINE MOTOR SKILLS

grow, projects become more complex and demanding. As eighth graders and then in twelfth grade, students carry out independent projects, which could be a piece of electronic equipment, clothing, jewelry, or a musical instrument. (Students also carry out projects in science, literature, history, etc.)

Movement

Head injuries and early dementia are in the news. Nevertheless, aside from boxing, football and soccer, sports generally have a good reputation as far as intelligence goes. After all, sports require focus and strategic thinking as well as skill (Zauer 2010). Waldorf schools have always included eurythmy and gymnastics. Sports are played in the upper schools, but generally those with potential head injuries are not encouraged.

Movement is an important part of Waldorf school method and curriculum. In the early grades students stamp or clap out their times tables as they march around the classroom. (This is especially important for little boys, who much enjoy making noise and stamping around to please the teacher rather than irritating her/him, which is too often the case in conventional schools.) Eurythmy, a style of movement in accord with speaking or musical sounds or feelings, is introduced from the first grade, with more complex movements and coordination as the students progress. Besides introducing the regular sports, gymnastics is also learned to foster a sense for orientation in space. Dramatic productions and recitation begin already in grade one and increase in complexity, culminating in the lower school with a Shakespeare production in eighth grade and a more complex modern drama or musical in twelfth grade.

Personal Connections to Adults

This is one area where Waldorf schools stand out dramatically from the trend in public and other private schools, where increasingly teachers and books are being replaced by computers.

In general in the lower school, from first through eighth grade, one teacher, the "Class Teacher," carries a class from first through eighth grade. Thus the teacher comes to know each child personally, as well as the family, through class meetings, parent conferences and home visits. Teachers can be sensitive to the developmental stage of each individual student, recognizing those who are able to push ahead to

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advanced work, and giving special attention to those needing more time. Each student can be recognized for his or her positive contribution to the class. Through class projects, plays, outings, camping trips, teachers and children get to know each other personally. Waldorf schools generally do introduce computers and calculators in the upper school, as useful tools. As with other modern technology, Waldorf schools are more interested in the inner workings of a machine, its historical development and effect on society.

Early Foreign Language Study

Children find it especially easy to assimilate a foreign language during the first seven years of life. At that point the language window begins to close, but children are still able to learn fairly easily through the lower school years (Hancock 1996). This language window is recognized and made use of by Waldorf schools, virtually the only schools to teach foreign languages from grade one. Generally two foreign languages are introduced in first grade.

The first teaching is through simple songs and poems, to develop a feel for the foreign sounds and rhythms. Later conversation, culture, vocabulary, grammar are introduced as appropriate.

In high school, through the worldwide network of hundreds of Waldorf schools, students may arrange to attend schools in foreign countries or participate in an exchange with a student in a sister school, for example, in Germany, Spain, France, Columbia. It is not uncommon for students from



STUDENTS EXPERIENCE THE ART OF KIMONO WEARING IN JAPANESE CLASS

abroad appear as regular students in Waldorf schools. Recent examples from one school found visitors from England, Germany, Afghanistan and China.

In-depth Extended Study

Success in life requires more than the ability to assimilate facts or pass exams. It requires the ability to focus on a particular subject or task for an extended period of time (Tough, 2012). Waldorf schools develop this ability through the main lesson system and through the de-emphasis on memorizing and testing facts just for tests.

Each morning the school day starts with the “Main Lesson.” This is a double period (or longer) in which one subject is the main focus for three or four weeks, for example, English,

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mathematics, physics, geography. The longer time gives the teacher opportunity to develop a topic thoroughly. Students write reports, often carry out individual or class projects, complete their own “main lesson books,” which generally includes daily essays, drawings or pictures illustrating the material. There may be a review at the end of a block of study, but student participation and the written record are at least as important. In the elementary school teachers submit written evaluations rather than grades. In the high school, written personal evaluations of each student in each class continue, together with a letter grade, which generally includes all aspects of the course, not just test results.

Artistic Teaching

Deep learning takes place through emotional or artistic connections, awakening the feelings (Foer, 2011, *The Art and Science of Remembering Everything*). This is how Waldorf teachers design their lessons.

We remember best if the material is connected to our feelings. The classroom itself is aesthetically pleasing, with walls painted in flowing colors, wooden cabinets, generally few or no right angles in order to encourage “thinking outside the box.” Human experience, struggles of historical personalities, make history and science come alive. Excitement, wonder, expectations, can awaken connections. Teachers are encouraged to be creative in their approach, designing their own lesson plans as they envision the children in their own particular class.

Breaks Between Classes

Controlled studies of university students have demonstrated that taking a break after a learning session, prior to going on to new material, significantly improves retention of what was learned (Richtel, 2010).



ALL STUDENTS LEARN TO PLAY A STRINGED INSTRUMENT

Following the first (double) period of the day, the “Main Lesson,” there is a long break of generally a half hour. Then a series of perhaps three lessons follow prior to lunch. However, although there may be no breaks between these classes, generally one, often the middle one, is non-academic, such

as chorus, orchestra, eurythmy or gymnastics. Thus a good break often occurs between all academic classes. After the morning classes is lunch, then afternoon classes, often half or all given over to art or handwork.

Private Schools, School Choice

Attempts to make inroads into the public school system in this country have been tried in recent years. Alternatives include prep schools, Montessori schools, Waldorf schools, free schools, and home schooling. More recently school vouchers, charter schools, and for-profit schools have been tried. The available studies often show improvements in school achievement among students attending independent schools. (Free, 2007, Bohlmark and Lindahl 2012). Further, when school choice was introduced in Sweden, not only did the achievement of students in independent schools improve, but the students remaining in public schools also improved their test scores. The speculation was that competition had caused the remaining state schools to improve as well.

Waldorf Graduates and How They Fare

Parents often wonder if students at Waldorf schools are prepared with sufficient academic rigor in mathematics and writing to succeed in other high schools or in college or university.

Waldorf students develop writing skills well above the typical high school graduate.

A detailed survey of Waldorf school graduates was carried out in Germany several years ago (Barz and Randoll 2007). The general findings were that graduates at first found it more difficult to orient themselves in the higher academic world. However once they had made the transition, they were better able than their peers to set a course and pursue goals successfully. As far as I know the book has not been translated. With regard to written expression, a key element in any college curriculum or profession, Waldorf students develop writing skills well above the typical high school

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graduate, whose ability in this area is often bemoaned by college teachers. Waldorf students are constantly writing reports and essays, which are corrected and must be revised. In addition to regular English classes, writing is part of all main lessons, including those in math and the sciences. Another survey, of North American Waldorf school alumni (available from AWSNA), included some 600 graduates. The results: 94% went to college (most to elite, selective institutions), 88% graduated and over 50% had done or were



EARLY CHILDHOOD STUDENTS ENJOY AN ABUNDANCE OF OUTDOOR PLAY TIME

planning to do graduate work. As college students, they were often recognized by their college professors as self-directed, eager to learn, and demonstrating problem-solving abilities, communication skills, and social awareness (Mitchell and Gerwin, 2008). As a Waldorf college guidance

counselor I personally visited over two dozen colleges and universities in the Northeast. Most admissions officers recognized the Waldorf name and had a very positive attitude, encouraging our students to apply. Rare is the applicant who comes in with the beautiful portfolios our students put together. They stand out also in their ability to express themselves verbally.

Anecdote: Knut Wicksell

A brilliant economist, Knut Wicksell developed Keynesian economics prior to or parallel to John Maynard Keynes, but was given little credit as he published in Swedish. However Wicksell is recognized as the one who brought Sweden out of the Great Depression long before any other nation. Wicksell did not wish his sons to be subject to the state school system, so he sent them to live on a farm in the country until high school. Nevertheless one became a mathematician and the other a medical doctor. With a similar sensitivity to learning readiness, Waldorf schools do not try to push children forward before they have reached the appropriate developmental stage. At this point learning is more efficient and also more fun and rewarding.

International Comparisons

The Relevance of Finland (Alvarez 2004, "Charlemagne," 2006, Finland, 2006, "Overhauling" 2010, Sahlberg, 2010, Wooldridge 2013, Guttenplan 2012, Ripley 2013).

For several years international student performance comparisons of 15 year olds have been carried out using standardized tests, the so-called PISA studies. (PISA is an acronym standing for "Program for International Student

Assessment," not the Italian city.) The school system which consistently tops all the others is that of Finland. There has been much speculation as to why this might be, and many researchers have traveled to Finland to try to find out.

Teacher-run School

The Finnish school system turns out to have much in common with Waldorf schools. One thing it obviously does not have in common is independent schools. In Finland the schools are part of a government system. However it is a system totally different than in other countries, including this one. For there is no national curriculum nor national testing. Each school is independent and run by the teachers themselves. The administration is there to do administration, facility management, etc. All pedagogical decisions are made by the teachers. Generally, the teachers work collegially, planning classes and programs together (Guttenplan 2012). (This is also true in Chinese schools studied, big city schools to be sure.) There is testing, but tests are designed by the teachers, primarily as diagnostics. Because the teachers are in a real profession, where they are able to be creative and take initiative, there is a high demand for the available teaching

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positions. The profession has the top talent even though it pays comparatively low salaries. Applications to mandatory teacher training institutes far exceed available places. Because of their professional status, teachers generally enjoy a high regard in the community. So the state school system is essentially a system of independent teacher-run schools.

The similarity to Waldorf schools is clear: Waldorf schools are also independent and teacher-run. All pedagogical decisions are made by the teachers themselves. Certainly Waldorf teachers are generally trained in the traditions and methodology of Rudolf Steiner and 100 years of Waldorf school experience. But teachers are free and encouraged to develop new approaches or material appropriate to their students today and in the particular region and culture in which the school is located.

Beyond being teacher-run, the schools (and Finland in general) have many features reminding us of Waldorf Schools:

- There are breaks between classes for students to go outside, play music or games, snack or just relax and let the last class sink in.

- The State subsidizes music lessons, so playing music is not just for the upper classes.
- There is a strong handwork and craft tradition in Finland.

The Finnish example demonstrates that the main solutions often offered, namely, more funding and independent schools, though helpful, are not necessary for a first-rate school system. On the contrary, independent schools which are teacher-run give the best results, whether in a state system or not. All of these findings support Waldorf education. (In the results of the latest PISA testing [2012] (Finn-ished, 2013), Finland fell behind several east Asian systems, particularly in mathematics, but also in reading and science. The top performer was the Chinese city of Shanghai, though it does seem unfair to compare a city with

national scores. Still, the East Asian systems display several key elements we have recognized: teacher training and status and improving the education of all students, including poor and disadvantaged. The downside of these systems is the extreme academic pressure and the lack of balance, as academics fill the whole day from morning to night.)

*Originally published in Renewal, Fall/Winter 2013
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FIFTH GRADE GEOMETRY BLOCK DEVELOPS APPRECIATION FOR MATH CONCEPTS

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THREE CEDARS IS SET ON 5.5 WOODED ACRES WHERE WILD AND CULTURED LAND APPEAL TO STUDENTS' SENSE OF IMAGINATIVE PLAY AND EXCITEMENT FOR LEARNING