

Waldorf Journal Project #19

April 2012

AWSNA

Technology



Compiled and edited by

David Mitchell

Be not afraid of growing slowly.

Be afraid only of standing still.

– Chinese Proverb

Technology

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Foreword

The Waldorf Journal Project, sponsored by the Waldorf Curriculum Fund, brings translations of essays, magazine articles, and specialized studies from around the world to English-speaking audiences. In this journal we focus primarily on the subject of technology.

We hope that this Journal will help teachers and others gain insight into the seeds of Waldorf education. The Waldorf Journal Project #19, and all other Waldorf Journals are available online at

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The editor is interested in receiving your comments on the material selected. We would also be interested in hearing what areas you would like to see represented in future Journal projects. If you know of specific articles that you would like to see translated, please contact me.

– David Mitchell, editor
Waldorf Journal Projects



Rudolf Steiner and Technology

Translated by Ted Warren

From “The Destinies of Individuals and of Nations” lectures given in Berlin from September 1, 1914, to July 6, 1915—from the lecture given on January 19, 1915: “The Nature of the Christ Impulse and Serving the Michaelic Spirit”

[Today] we live among the hustle and bustle of the present age, and we can certainly say that the mechanized life has also spread everywhere. Fundamentally speaking, we are always within the mechanized life of the present age. When asleep, the soul merges into everything that is mechanism. These are mechanisms, however, that we have constructed ourselves. A mechanism we have built is something quite different from nature outside us, for this has been constructed by the elemental spirits. When we are out in the woods, for instance, where everything has been built up by the spirits of nature, we are in an environment that is totally different from the environment of mechanical contrivances created by ourselves. What are we doing when we take things from nature and put them together to make the machines and appliances we use in our lives? We are in that case not merely putting together physical components, for in putting together physical components, we always provide opportunity for a demonic Ahrimanic servant to unite with the machine. We do this with every machine, every mechanism, in everything of this kind that is part of modern civilization, providing a point of attachment for demonic elemental spirits of Ahrimanic nature. And living surrounded by machines, we live together with these demonic Ahrimanic elementals. We allow them to enter into us; we allow not only the squealing and groaning of machines to enter into us, but also an element that is eminently destructive for our spirit and our soul.

Please note—and I have often made a similar comment on similar occasions—what I am saying is not intended to be a criticism of our Ahrimanic age. It has to be like this, that we allow demons to stream into everything and allow ourselves to be surrounded by them. It is part of the evolution of mankind. We have to acknowledge the simple necessity for this and understand the real impulse of spiritual science. And so we will not sing the praises of people who

say it is necessary, as far as possible, to protect oneself from the demons and to shun civilization and that we should set up a colony as far away as possible in the wilderness to save us from having anything to do with these demonic Ahrimanic elementals. That has never been the tenor of my words. I have always said that we must entirely accept what comes to us out of the necessity of evolution, that we must not let ourselves be induced to flee from the world. We need to take heed, however, we need to understand that conditions are such in our age that we are filling our environment more and more with beings of a demonic nature, that we are more and more involved with the principle that is mechanizing our civilization. An age such as this calls for something quite different than the age out of which Joan of Arc was called to do her work.

From “Soul Economy and Waldorf Education” lectures given in Dornach, Switzerland, December 23, 1921 to January 5, 1922—from the lecture given on December 31, 1921: “Children from the Seventh to the Tenth Year”

To believe that anthroposophists always rail against new technology is to seriously misunderstand this movement and its contribution to our knowledge of the human being. It is necessary to see the complexities of life from a holistic perspective. For example, I do not object at all to the use of typewriters. Typing is, of course, a far less human activity than writing by hand, but I do not remonstrate against it. Nevertheless, I find it is important to realize its implications. So you must forgive me if, to illustrate my point, I say something about typewriting from the point of view of anthroposophic spiritual insight. Anyone unwilling to accept it is perfectly free to dismiss this aspect of life’s realities as foolish nonsense. But what I have to say does accord with the facts.

You see, if you are aware of spiritual processes, like those in ordinary life, using a typewriter creates a very definite impression. After I have been typing during the day (as you see, I am really not against it, and I am pleased when I have time for it), it continues to affect me for quite a while afterward. In itself, this does not disturb me, but the effects are noticeable. When I finally reach a state of inner quiet, the activity of typing—seen in *imaginative* consciousness—is transformed into seeing myself. Facing oneself standing there, one is able to witness outwardly what is happening inwardly. All this must occur in full consciousness, which enables us to recognize that appearance, as form as an outer image, is simply a projection of what is or has been taking place, possibly much earlier, as inner organic activity. We can clearly see what is happening inside the human body once we have reached the stage of clairvoyant *imagination*. In objective seeing such as this, every stroke of a typewriter key becomes a flash of lightning. And during the state of *imagination*, what one sees

as the human heart is constantly struck and pierced by those lightning flashes. As you know, typewriter keys are not arranged according to any spiritual principle, but according to frequency of their use, so that we can type more quickly. Consequently, when the fingers hit various keys, the flashes of lightning become completely chaotic. In other words, when seen with spiritual vision, a terrible thunderstorm rages when one is typing.

Such causes and effect are part of the pattern of life. There is no desire on our part to deride technical innovations, but we should be able to keep our eyes open to what they do to us, and we should find ways to compensate for any harmful effects. Such matters are especially important to teachers, because they have to relate education to ordinary life. What we do at school and with children is not the only thing that matters. The most important thing is that school and everything related to education must relate to life in the fullest sense. This implies that those who choose to be educators must be familiar with events in the larger world; they must know and recognize life in its widest context. What does this mean? It means simply that here we have an explanation of why so many people walk about with weak hearts; they are unable to balance the harmful effects of typing through the appropriate countermeasures. This is specially true of people who started typing when they were too young, when the heart is most susceptible to adverse effects. If typing continues to spread, we will soon see an increase in all sorts of heart complaints.

The first railroad in Germany was built in 1835, from Furth to Nuremburg. Before this, the Bavarian health authorities were asked whether, from a medical point of view, building such a railroad would be recommended. Before beginning major projects such as this, it was always the custom to seek expert advice. The Bavarian health authorities responded (this is documented) that expert medical opinion could not recommend building railroads because passengers and railroad workers alike would suffer severe nervous strain by traveling on trains. However, they continued, if railroads were built, despite their warning, all railroad lines should at least be closed off by high wooden walls to prevent brain concussions to farmers in nearby fields or to others likely to be near moving trains.

These were the findings of medical experts employed by the Bavarian health authority. Today we can laugh about this and similar examples. Nevertheless, there are at least two sides to every problem, and from a certain point of view, one could even agree with some aspects of this report, which was made not so long ago—in fact even a century ago. The fact is, people have become more nervous since the arrival of rail travel. And if we made the necessary investigation into the difference between people in our present age of the train and those who continued to travel in the old and venerable but rather rough stage coach, we would definitely be able to ascertain that the constitutions of those

latter folks were different. Their nervous systems behaved quite differently. Although the Bavarian health officials made fools of themselves, from a certain perspective they were not entirely wrong.

When new inventions affect modern life, we must take steps to balance any possible ill effects by finding appropriate countermeasures. We must try to compensate for any weakening of the human constitution through our outer influences by strengthening ourselves from within. But, in this age of ever-increasing specialization, this is possible only through a new art of education based on true knowledge of the human being.

The only safe way of introducing writing to young children is the one just advocated, because at that age all learning must proceed from the realm of the will, and the inclination of children toward the world of rhythm and measure arises from the will. We must satisfy this inner urge of children by allowing them controlled will activities, not by appealing to their sense of observation and their ability to make mental images. Consequently, it would be inappropriate to teach reading before the children have been introduced to writing, for reading represents a transition from will activity to abstract observation. The first step is to introduce writing artistically and imaginatively and then to let children read what they have written. The last step, since modern life requires it, would be to help children read from printed texts. Teachers will be able to discern what needs to be done only by applying a deepened knowledge of the human being, based on the realities of life.

A Few Quotes on Technology

Today we must learn to let people participate in life, and if we organize education so that people are able to participate in life, you will find that we are really able to help human beings to a living culture.

– Rudolf Steiner, *Social Basis for Education*, lecture 1

Human judgment can be cultivated only from and after the 14th year when those things requiring judgment must be introduced into the curriculum. Then all that is related, for example, to the grasping of reality through logic can be begun. ...

All instruction must give knowledge that is necessary for life. During the ages from 15 to 20, everything to do with agriculture, trade, industry, and commerce will have to be learned. No one should go through these years without acquiring some idea of what takes place in farming, commerce, industry, and technology. ...

During these years those subjects will be introduced which I would call world affairs, historical and geographical subjects, everything concerned with nature knowledge—but all this in relation to the human being, so that man will learn to know man from his knowledge of the world as a whole.

– Rudolf Steiner, *Social Basis for Education*, lecture 1

We live in a world produced by human beings, molded by human thought, which we do not understand in the least. This lack of comprehension for human creation, or for the results of human thought, is of great significance for the entire complexion of the human soul and spirit. In fact people must benumb themselves to escape the realization of influences from this source. ...

There is at least some pleasure in seeing people who are completely ignorant of the workings of an electric railway get in and out of it with a slight feeling of discomfort.

For this feeling of discomfort is at least the first glimmering of an improvement in attitude. The worst thing is participation in a world made by human heads and hands without bothering in the least about that world.

– Rudolf Steiner, *Practical Course*, lecture 12



Education for Adolescents

By Rudolf Steiner

Translated by C.B.

When children come to the age of puberty, it is necessary to awaken within them an extraordinarily great interest in the world outside of themselves. Through the whole way in which they are educated, they must be led to look out into the world around them and into all its laws, its course, causes and effects, into man's intentions and goals—not only into human beings, but into everything, even into a piece of music, for instance. All this must be brought to them in such a way that it can resound on and on within them, so that questions about nature, about the cosmos and the entire world, about the human soul, questions of history, so that riddles arise in their youthful souls.

When the astral body* becomes free at puberty, forces are freed which can now be used for formulating these riddles. But when these riddles of the world and its manifestations do not arise in young souls, then these same forces are changed into something else. When such forces become free, and it has not been possible to awaken the most intensive interest in such world-riddles, then these energies transform themselves into what they become in most young people today. They change in two directions into urges of an instinctive kind: first into delight in power, and second into eroticism.

Unfortunately pedagogy does not now consider this delight in power and the eroticism of young people to be the secondary results of changes in things that, until the age of 20 or 21, really ought to go in an altogether different direction, but considers them to be natural elements in the human organism at puberty. If young people are rightly educated, there should be no need whatsoever to speak about love of power and eroticism to them at this age. If such things have to be spoken about during these years, this is in itself something that smacks of illness. Our entire pedagogical art and science is becoming ill because again and again the highest value is attributed to these questions. A high value is put upon them for no other reason than that people are powerless today—have grown more and

* A term used to designate all that is sentient in man and in animals.

more powerless in the age of a materialistic world-conception—to inspire true interest in the world, the world in the widest sense. ...

When we do not have enough interest in the world around us, then we are thrown back into ourselves. Taken all in all, we have to say that if we look at the chief damages created by modern civilization, they arise primarily because people are far too concerned with themselves and do not usually spend the larger part of their leisure time in concern for the world but busy themselves with how they feel and what gives them pain. ... And the least favorable time of life to be self-occupied in this way is during the ages between 14, 15 and 21 years old.

The capacity for forming judgments is blossoming at this time and should be directed toward world-interrelationships in every field. The world must become so all-engrossing to young people that they simply do not turn their attention away from it long enough to be constantly occupied with themselves. For, as everyone knows, as far as subjective feelings are concerned, pain only becomes greater the more we think about it. It is not the objective damage but the pain of it that increases as we think more about it. In certain respects, the very best remedy for the overcoming of pain is to bring yourself, if you can, not to think about it. Now there develops in young people just between 15, 16 and 20, 21, something not altogether unlike pain. This adaptation to the conditions brought about through the freeing of the astral body from the physical is really a continual experience of gentle pain. And this kind of experience immediately makes us tend towards self-preoccupation, unless we are sufficiently directed away from it and toward the world outside ourselves. ...

If a teacher makes a mistake while teaching a 10- or 12-year-old, then, as far as the mutual relationship between pupil and teacher is concerned, this does not really make such a very great difference. By this I do not mean that you should make mistakes with children of this age. ... The feeling for the teacher's authority will flag for a while, perhaps, but such things will be forgotten comparatively quickly, in any case much sooner than certain injustices are forgotten at this age. On the other hand, when you stand in front of students between 14, 15 and 20, 21, you simply must not expose your latent inadequacies and so make a fool of yourself. ...

If a student is unable to formulate a question which he experiences inwardly, the teacher must be capable of doing this himself, so that he can bring about such a formulation in class, and he must be able to satisfy the feeling that then arises in the students when the question comes to expression. For if he does not do this, then when all that is mirrored there in the souls of these young people goes over into the world of sleep, into the sleeping condition, a body of detrimental, poisonous substances is produced by the unformulated questions. These poisons are developed only during the night, just when poisons ought really to be broken down and transformed instead of created. Poisons are produced that burden the

brains of the young people when they go to class, and gradually everything in them stagnates, becomes “stopped up.” This must and can be avoided. But it can be avoided only if the feeling is not aroused in the students: “Now again the teacher has failed to give us the right answer. He really hasn’t answered us at all. We can’t get a satisfying answer out of him.” Those are the latent inadequacies, the self-exposures that occur when the children have the feeling: “The teacher just isn’t up to giving us the answers we need.”

And for this inability, the personal capacities and incapacities of the teacher are not the only determining factors, but rather the pedagogical method. If we spend too much time pouring a mass of information over young people at this age, or if we teach in such a way that they never come to lift their doubts and questions into consciousness, then the teacher—even though he is the more objective party—exposes, even if indirectly, his latent inadequacies. ...

You see the teacher must, in full consciousness, be permeated through and through with all this when he deals with the transition from the ninth to the tenth grade, for it is just with the entire transformation of the courses one gives that the pedagogy must concern itself. If we have children of six or seven, then the course is already set through the fact that they are entering school, and we do not need to understand any other relationship to life. But when we lead young people over from the ninth to the tenth grade, then we must put ourselves into quite another life-condition. When this happens, the children must say to themselves: “Great thunder and lightning! What’s happened to the teacher! Up to now we’ve thought of him as a pretty bright light who has plenty to say, but now he’s beginning to talk like more than a man. Why, the whole world speaks out of him!”

And when they feel the most intensive interest in particular world questions and are put into the fortunate position of being able to impart this to other young people, then the world speaks out of them also. Out of a mood of this kind, *verve* (*Schwung*) must arise. Momentum is what teachers must bring to young people at this age, momentum which, above all, is directed towards imagination. For, although the students are developing the capacity to make judgments, judgment is actually born out of the powers of imagination. And if you deal with the intellect intellectually, if you are not able to deal with the intellect with a certain imagination, then you have “mis-played,” you have missed the boat with them.

Young people demand imaginative powers; you must approach them with verve, and with verve of a kind that convinces them. Scepticism is something that you may not bring to them at this age, that is in the first half of this life-period. The most damaging judgment for the time between 14, 15 and 18 is one that implies in a pessimistically knowledgeable way: “That is something that cannot be known.” This crushes the soul of a child or a young person. It is more possible after 18 to pass over to what is more or less in doubt. But between 14 and 18 it is soul-crushing, soul-debilitating, to introduce them to a certain scepticism.

What subject you deal with is much less important than that you do not bring this debilitating pessimism to young people.

It is important for oneself as a teacher to exercise a certain amount of self-observation and not give in to any illusions; for it is fatal if, just at this age, young people feel cleverer than the teacher during class, especially in secondary matters. It should be—and it can be achieved, even if not right in the first lesson—that they are so gripped by what they hear that their attention will really be diverted from all the teacher's little mannerisms. Here, too, the teacher's latent inadequacies are the most fatal.

Now if you think, my dear friends, that neglect of these matters unloads its consequences into the channels of instinctive love of power and eroticism, then you will see from the beginning how tremendously significant it is to take the education of these young people in hand in a bold and generous way. You can much more easily make mistakes with older students, let us say with those at medical school. For what you do at this earlier age works into their later life in an extraordinarily devastating way. It works destructively, for instance, upon the relationships between people. The right kind of interest in other human beings is not possible if the right sort of world-interest is not aroused in the 15- or 16-year-old. If they learn only the Kant-Laplace theory of the creation of the solar system and what one learns through astronomy and astrophysics today, if they cram into their skulls only this idea of the cosmos, then in social relationships they will be just such men and women as those of our modern civilization who, out of anti-social impulses, shout about every kind of social reform but within their souls actually bring anti-social powers to expression. I have often said that the reason people make such an outcry about social matters is because men are antisocial beings.

It cannot be said often enough that in the years between 14 and 18 we must build in the most careful way upon the fundamentally basic moral relationship between pupil and teacher. And here morality is to be understood in its broadest sense: that, for instance, a teacher calls up in his soul the very deepest sense of responsibility for his task. This moral attitude must show itself in that we do not give all too much acknowledgement to this deflection toward subjectivity and one's own personality. In such matters, imponderables really pass over from teacher to pupil. Mournful teachers, unalterably morose teachers, who are immensely fond of their lower selves, produce in children of just this age a faithful mirror picture or, if nothing else, kindle a terrible revolution. More important than any approved method is that we do not expose our latent inadequacies and that we approach the children with an attitude that is inwardly moral through and through. ...

This sickly eroticism which has grown up—also in people's minds—to such a terrible extent appears for the most part only in city dwellers, city dwellers who

have become teachers and doctors. And only as urban life triumphs altogether in our civilization will these things come to such a terrible—I do not want to say “blossoming,” but to such a frightful—degeneracy. Naturally we must look not at appearances but at reality. It is certainly quite unnecessary to immediately begin to organize educational homes in the country. If teachers and pupils carry these same detrimental feelings out into the country and are really permeated by urban conceptions, then you can call a school a country educational home as long as you like, but you will still have a blossoming of city life to deal with. ...

What we have spoken about here today is of the utmost pedagogical importance and, in considering the high school years, should be taken into the most earnest contemplation.

Translator’s note: This text, printed in the *Journal for Anthroposophy*, Spring 1979, consists of excerpts from a lecture given in Stuttgart on June 21, 1922. In a few cases the repetitions appropriate for spoken style have been omitted and sentences condensed.



On the Philosophy of Freedom

By Lorenzo Ravagli

Translated by Genie Sakaguchi

Let us imagine that we are wandering through a landscape, perhaps a mountain valley. A narrow path stretches out before us, climbing and turning, shadowed by pine trees and isolated larches. Sunlight glistens through the boughs of the trees. In the depths a brook is burbling, swollen with snow melt.

Steep, grey rock walls rise up on the other side of the valley, with white peaks on which the snow of the past winter lies. In the underbrush and the mossy ground through which our feet carry us, the first flowers of spring are showing themselves: coltsfoot, liverwort, and butterburs in radiant yellow, violet, and pink. The air is filled with warmth, birdsong sounds forth, and above, still unseen by us, the peaks are waiting. An ocean of sense impressions, which we bring together under the concept “mountain landscape,” a multifaceted order, meaningful within itself, an entire arrangement of things, living beings, and occurrences.

Let us imagine that we could move through the world of ideas just as we move through this mountain landscape. The concepts would not be less contoured than the rocks or the knobby firs. When we turn our spiritual eye towards an idea, its forms are revealed to us, its landscapes, its many-faceted links and connections. The idea of Being lights up here, there the idea of Justice—and for all of us, endless light streams down on all the experiences that are illuminated by these ideas. How do we know at all that something exists, if not through the idea of Being? How would we know what is just, if we did not have an idea of Justice, in the light of which the action of a human being appears as just? What moves us when we strive towards freedom, if not the idea of Freedom, which has become an ideal for us? Ideas are moving forces, they possess energy—for an idealist this is a result of experience. Through what does our experience receive meaning, through what do we recognize the relationships between things, between happenings? Through the content of ideas that we give to the world! Nature would perhaps still be ruled by laws, but they would remain hidden forever if we did not bring them into sight through our thinking. The world process would

remain incomplete if we did not grasp, through our thinking, the ground of things and what moves them.

When we understand the fundamental meaning of ideas for knowledge and for practical activity, then we might be able to comprehend why the young Rudolf Steiner could write such sentences as: “What the philosophers call the Absolute, Eternal Being, the Ground of the World, what religious people call God, that is what we call ... the Idea.” We can understand that he regarded perception as simply “a particular form of the concept.”

But as light-filled and meaningful as the ideas appear to us, can they replace the perception of, for example, a bellflower? We can understand a bellflower, its form, its structure, and the laws of its growth through ideas, but nevertheless, we still have to perceive it. And this experience of perception cannot replace the idea of a bellflower, no matter how intensely we view the idea. Perception is something that we must experience, to which we must expose our senses, to be able to grasp its [the flower’s] specific quality, its uniqueness, with our body and soul.

The idea is no substitute for the perception.

Even when our perception does not answer any question of knowledge, without our perception we would have no questions, and therefore, also, no knowledge. And we could not derive these perceptions from the ideas. They simply occur, as soon as we open our eyes, as soon as our consciousness awakens. Through our perceptions we are members of the sense world, through them this world communicates something to us that only our perceptions have to tell us. The world of perception is a world of first, original, unique, and unrepeatable events. And one such event is free activity. Can a person derive a free action out of an idea, in which everything is a well-founded interrelationship? No, because I myself must decide upon a free action, and no one can foresee if I will make this decision. A free action is something absolutely first, something, with which the world processes begin anew again and again. Free deeds are not repeated, even when the beginning repeats itself—but it is always from another new beginning, one that never was there before.

Hence there is a way from philosophy to freedom. Between his 21st and his 33rd year of life, Rudolf Steiner completed this path. It is the path from a researcher of Goethe to an Ethical Individualist. One could also say, the way from Plato to Aristotle. This is not a contradiction. Plato looked through the empirical sense world to the ideas and saw in the ideas the archetypes of all Being. Aristotle looked through the ideas to the empirical sense world and recognized that everything is permeated by ideas. And ultimately the free action is permeated by ideas, for in them the spirit experienced by thinking human beings becomes a moving force. The world of ideas, which rests within itself,

has poured itself into the stream of time and has disappeared into the world of perception. In human beings, in whose thinking the intuitions light up that cause the perceptions to be produced, the world of ideas re-emerges. The idea dies in the sense world and is resurrected in freely acting human beings. As a cosmos of moral intuitions, the “spiritual world” begins to take form in human beings.

Literature:

Rudolf Steiner, *The Philosophy of Freedom*, CW 4.



On Freedom

By Henning Köhler

Translated by Genie Sakaguchi

*Freedom is a precious thing that grows when it is used
and disappears when it's not used.*

– Carl Friedrich v. Weizsäcker

I would formulate it even more sharply: Freedom is a precious thing that arises first through being used. It requires daily maintenance.

This apparently has to do with something other than a habit often mistaken for freedom, the habit of denying all real connections and responsibilities, which essentially expresses the wish to reverse/rescind the incarnation. Everyone knows such moods. In themselves they are not wrong, but they must remain in the background. Otherwise we become sick.

Whoever wants to avoid all commitments lives in constant fear that his acts could lead to consequences from which he could not escape. A painful condition. In the denial of every obligation, there lives the longing “to float above it all.” Indeed, “a human being can only be a free being on earth” (Rudolf Steiner) in so far as he releases himself from all earthly circumstances, without falling into their bonds. Freedom lives in the heartfelt affirmation of one’s own actions. The archetypal scene is children at play. If children lose their joy in playing, they develop the disposition to avoid all liabilities (one should look out for this) and long to be back in Heaven.

There is no such thing as the status of freedom, but rather there are only free actions: activities, gestures, attitudes—including holding back—that are accompanied by the experience of freedom. The free action adapts itself according to experience, when a person has no other relevant reason for his action than that it seems to him to be deeply appropriate, authentic, and in accord with the situation, independent from considerations of need or goal-orientation, or according to the judgment of another person.

To understand that freedom in its essence is action, the actual concept must only be conceived widely enough. Thoughts are also deeds. Non-action can almost be an inner kind of music. “Action-without-action transforms itself into capacities for development,” writes François Jullien. Attention is activity, as everyone knows. “To exercise restraint” demands, as the word “exercise” already says, volitional activity. To be in stand-by mode is a condition brought about voluntarily. Otherwise it would be a kind of subjection.

In the element of freedom, the human being rises up as a spiritual individuality. This is also the source of the power of love. This is also true for children. Steiner spoke of this often and insistently.

It is a mistake to believe that freedom could develop in children without their having from the outset ample opportunity to confirm it for themselves in action. One cannot defer the question of freedom according to the motto: The I (ego) is born at 21 years of age; first at age 14 the efforts to assist in the birth could begin, and before that children are not in a position to deal with the situation of freedom, as freedom is a privilege of the mature human being. Here lies a misunderstanding. The I/ego is the guiding entity of development from the very beginning, long before the end of its “groundwork” on the so-called sheaths. Just in order to be able to bring this work to completion in the right way needs a great deal of freedom. From the beginning. The freedom of affirmation. Relaxed, casual play. And not least of all, the highly active doing of nothing in particular.

“What is achieved through play is, essentially, achieved through the self-directed activity of the child, through everything that we cannot avert with strict rules. Yes, just on this rests the basis of the essential and the educational in play, that we interrupt with our rules, with our pedagogical ... arts; [this should be] left to the child’s own forces,” said Steiner in a lecture given in Berlin in 1912. The basic Waldorf educational requirement formulated here holds good not only for young children, but rather for children at least up to the threshold of puberty.

We serve children better “the less determined and thought out [is] what takes place in their play, for the reason that a higher being, which cannot be forced into human consciousness, just then can come in. ... In a certain sense this remains an important educational factor for one’s entire life,” Steiner emphasized.

In the so-called “Christmas Course”¹ and referred to in *The Philosophy of Freedom* as the basis of his pedagogy, Steiner developed the idea that, with regards to the very young child, “one must bring up the question of freedom and, on the other side, the question of destiny.” For “when one looks rightly into the human heart, there one can see that the greatest portion of a human being’s earthly happiness in life, his feeling for his human worth, and his human dignity depend on the consciousness that he can have of freedom within his own breast.”

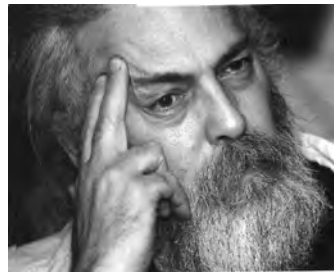
Note

1. CW 303, now published in English as *Soul Economy: Body, Soul, and Spirit in Waldorf Education*. Lectures to teachers, given in Dornach, December 23, 1921, to January 7, 1922.

Literature:

Rudolf Steiner, *Human History in the Light of Spiritual Science*, CW 61.

Rudolf Steiner, *Soul Economy*, CW 303.



Henning Köhler

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Human Capital – Commercial Value or Creative Potential?

By Henning Köhler

Translated by Genie Sakaguchi

In the most recent political campaign, all of the parties were in agreement that Germany should prioritize education. Sounds good. But whoever followed the discussions could not avoid the fact that almost no one spoke about education. The topic was the economic situation in Germany. The current debate on education “is unusually blind for values” writes Hans-Peter Waldrich (“The Action for Human Schools”) in *Blättern für deutsche und internationale Politik* 9/09. Using a quotation from Paul Liessmann, he criticizes the practical, educational nihilism of the day. The science of running businesses has been elevated to the leading science. New liberal think tanks deliver the theoretical justification for unsuccessful political decisions in education. Consider, for example, the Bertelsmann-Stiftung. In a commission for the federal state government of North Rhine-Westphalia, the text states, “The abstract demands for idealistic individualism are not sufficiently replaced by the context of society.” Education must be oriented to “the given economic and social orders.” The new humanistic paradigm must be overcome in the tradition of Wilhelm von Humboldt.

In addition Waldrich emphasizes that the ideal of “bringing forth autonomous individuals” continues to live in the reform educational spectrum. Some Waldorf educators have distanced themselves from the reform education movement. I find that not true. One should not deny the historical ideas we have in common, but we should nourish them. *The time is ripe to stand together against the ventures that turn schools into factories for well-adjusted people who serve the vague prognosis of an economic career.* Rudolf Steiner warned: Never should the economic advantage become the decisive factor when we develop individual abilities. Keeping capital and politics from mixing in the affairs of education provides the optimal awareness for economic productivity and social progress. (Steiner)

“Human capital” is a two-sided concept. In the jargon of educational nihilism, it stands for the opposite purpose, namely to judge human beings according to their economical value. Or one can understand the concept “human capital” as Steiner does: the authentic, untarnished creative potential of our youth, protected from any manipulation or mechanization. Indeed they are our true human capital. The continual flow of new youth into society must be accomplished. “At any level there is no education other than self education.” And further, “As teachers and educators we are no more than the true environment for the self-educating child.” (Steiner) These maxims, taken by word could create a “grassroots revolution” against the trend to tie education to the economic system.



An Information and Communication Technology Curriculum for Steiner/Waldorf Schools

By William Steffen

Rationale

With very few exceptions our pupils aged 14 and over now have access to and use computers, the internet and mobile phones on a daily basis, and their actions are supported by an invisible network of electronic data handling and processing (transport, shopping, bookings, media, and so forth).

Steiner demanded that pupils in Waldorf schools gain an insight into the working principles of the technological devices they use at the time. Such insight enables freedom and judgment in their use. He was also concerned that pupils leaving school are equipped with the necessary life skills that enable them to take the step into the world of work or further education. Today there are firm expectations placed on school leavers with regard to Information and Communication Technology (ICT) skills from further education colleges, employers and, not least, parents and the pupils themselves.

The introduction and teaching of ICT in Waldorf schools in Britain and abroad has been largely left to the individual schools and, in most cases, to the initiative of particular teachers who happen to have the relevant interests and skills. Some schools have rejected the idea of introducing ICT teaching and computers on grounds of principle or due to lack of finance and/or skilled teaching staff. Where ICT teaching is happening, considerations such as what skills the students will be expected to have at a further education level usually determine the curriculum content.

The curriculum model described here is based on the perception that the time has come when our curriculum needs to integrate in a deeper and comprehensive way the reality of this technology that shapes our daily life. We need to be clear why we are teaching ICT in our schools, and the strands of the curriculum need to embrace the range of pedagogical and social aspects that we want to address in any subject taught in a Steiner/Waldorf school.

We accept the fundamental insight and pedagogical conviction that the teaching of ICT skills and the use of the computer as a learning tool has no place in our education for pupils up to the age of about 13 (class 7). There will be exceptions here for pupils with special educational needs. This means that in order to do justice to the expectations indicated above, the ICT curriculum in our upper schools will need to be given an adequate place in terms of time and resources to achieve its aims in the relatively short time span available.

The curriculum needs to set a number of fundamental objectives that can be achieved by each student:

- An understanding of the underlying scientific principles and technology,
- A historic perspective of the development of information and communications systems and their cultural significance,
- The development of an appropriate range of computer skills,
- The use of these skills creatively in a variety of subject and life skills contexts,
- The constructive working together with others in the use of ICT for more complex tasks,
- An awareness of the social, cultural and personal impact of this technology, and
- The ability for critical review and judgment of one's own and others' use of this technology.

In the present model these objectives give rise to the six curriculum strands outlined below.

Curriculum Strands

Strand 1 – Understanding the Technology

This strand will be addressed largely in main lessons and practical blocks, particularly in classes 9 and 11. Topics include an understanding and, wherever possible, hands-on practical work on: coding, binary and other number systems, algorithms for arithmetic/logic operations, electromagnetic and transistor switches, logic gates, simple circuits for bi-stable, adder and decoder, electromagnetic information storage, the working of the processor unit, components of a PC, printers, CD-ROM, visual displays, the basic technology of telegraphy and telephone, networks, the Internet, and virus and other security technology.

This strand is strongly embedded in the middle and upper school maths and physics (technology) curriculum and will usually be taught by these specialist teachers.

Strand 2 – Historic Perspectives

This strand will usually be addressed hand-in-hand with strand 1. It gives historic and social depth and significance to the emergence (and loss) of these man-made ‘tools.’ This will include topics such as number, letter and image representations, forms of writing through various cultures, forms of human communication from beacons to the Internet and the personalities associated with such inventions, the development of calculating devices from the abacus through Pascal’s early calculating machines to modern computers, and the emergence of firms such as IBM, Microsoft and Cisco.

Strand 3 – Developing Computer Skills

This covers the systematic acquisition and practice of computer literacy skills. In most instances this will be best addressed in concentrated initial blocks of skills teaching in group sessions, using an ICT room. Applications skills will include typing, word processing, spreadsheet, desktop publishing, spreadsheet databases, and using CD-ROM and internet for study resources as well as email, and may go on to presentation software, relational databases, HTML and web page design, specialized graphics and CAD software. It will also address the handling of printers, scanners, digital photography and possibly other multimedia forms.

As there is usually a huge diversity of previous experience in this field, student groups will often need to be formed on the basis of this criterion. Critical review of the student’s own approach and standard of work is to be cultivated. The practice and reinforcement of what has been learned is difficult to achieve without open access to the ICT facilities for the students. Experienced ICT teaching staff will be teaching this component, using ‘real’ materials and tasks as much as possible.

Strand 4 – Using Computer Skills in Other Subjects

Developing applications skills is no end in itself. The skills are to support pedagogically relevant tasks and projects in a number of subjects. This requires that as far as possible subject teachers have a certain level of ICT capability. Opportunities where ICT can support and enhance work include maths investigations, media studies in English, project work across most subjects (including class 8 and class 12 projects), and science investigations (planning and write-up including use of graphs). Again, this aspect is difficult to foster without open access to the ICT facilities for the students during break and study times.

Strand 5 – ICT Supporting the Development of Life Skills

Beyond the use of ICT in other subjects, it can serve a range of issues and activities in which the student is creatively involved, possibly outside of

school. This may range from club activities, drama groups, award applications, careers explorations, work experience placements, college applications, and job applications. Indeed the whole realm of business studies and citizenship offers a focus to combine the development of ICT skills with vocational and life skills. This curriculum model suggests providing such a specific focus. This lends itself to working creatively and critically in smaller or larger teams and on more complex tasks such as setting up an enterprise. Open access to the ICT facilities for the students during break and study times is an essential prerequisite here.

Strand 6 – Health & Safety, Security, Legal and Society Issues

Almost at every instance of using ICT, issues such as these crop up: How do I care for my and other people's health when using computers? How do I recognize that I'm heading for addiction or repetitive strain injury? What are the implications of generations who have grown up on violent computer games? Who 'owns' the program I'm using? Who has access to what? Who will use the personal information I am disclosing? Why do we have a new operating system every 2–3 years and a spiralling escalation of speed, memory, and so forth, in our PCs? What are the prospects of cyber-terrorism? These questions will be looked at formally and informally on many occasions. This curriculum proposes to give these a special focus in classes 8 and 12.



Outline ICT Curriculum in Steiner Waldorf Schools

Curriculum strand	Class 8	Class 9	Class 10	Class 11	Class 12
1 Understanding the Technology	Number systems (10, 2, 16 base etc). The abacus. Algorithms for arithmetic operations.	Electromagnetism; relay switch; simple circuits with relays (AND, OR, NOT switches); truth tables; circuit diagrams for bi-stable, adder, decoder with truth tables. Magnetic storage (tape, disks). Elements of a PC (motherboard, CPU, RAM, disk storage, peripherals) Dismantle and rebuild a PC. Technology of telegraph, telephone, Internet.		Semiconductors, transistor, gating chips (AND, OR, NOT); Build bi-stable, decoder, counter, adder with gating chips; Machine code programming. The myth of the 'intelligent computer'. Technology of printers, CD-ROM, CRT monitors, TFT screens.	Networks, IP/TCP, LAN, WAN Network security, data backup strategies; Virus protection, firewalls Broadband internet access
2 Historic Perspectives	Coding (Roman, Maya, Egyptian, Indian numbers; Morse code, ASCII code)	Development and cultural significance of Communication: Beacons, runners, books, newspapers, telegraph, telephone, internet; Faraday, Morse, Bell, Pentagon, Cisco.		Development of calculating devices: Abacus, Pascal, Hollerith/IBM, Intel. Development and cultural significance of information systems: from Babylonian writing, hieroglyphs, text to graphic design, web design, computer-generated film and art: virtual reality.	
3 Developing computer skills	Learn to (touch) type (at home and in breaks at school); Basic PC and Windows handling skills; Basic word-processing. Find relevant and good quality reference material from CD-ROM and Internet.	Concentrated course on word-processing, spreadsheet, spreadsheet databases, DTP; Windows file system and management.	Digital photography, scanning, image processing, printing; DTP; internet, email.	Presentation software. Write simple HTML web pages; Integrating different applications documents.	Optional: Relational databases; website design; specialised graphics software, CAD, control software.
4 (Using computer skills in other subjects	Use CD-ROM and Internet reference material for class 8 project (if passing a typing speed test, pupil may write up project on computer).	Use ICT skills in some subjects (English, history, geography, science, maths)	Use ICT skills in many subjects; coursework, maths investigations (eg functions, iterations), main lesson projects	Use ICT skills in many subjects; English (media), coursework, maths investigations (eg fractals, chaos theory), main lesson projects. Follow modern developments eg in biotechnology, current affairs on internet.	Use ICT skills in many subjects for coursework, projects etc. Class 12 projects.
5 ICT in support of life skills		Preparing class trip or other outings, play programmes etc. Exploring careers options with careers resources program.	Course on life, careers, citizenship, business skills; working through a range of documentation items (letter styles, CVs, logos, job applications, job descriptions, adverts etc.	Project: to set up and present an enterprise (in groups), creating logo, leaflets, letterhead, advert, job descriptions, agenda for board meetings, development plan, web page	College, job and UCAS applications.
6 Health & safety, security, legal and social aspects	Copyright issues; health issues; good posture; The role of computers and communication in society.	Copyright issues; health issues; good posture; The role of computers and communication in society.			The role of computers in society. Corporate interests/influence Intellectual property rights; Protecting Privacy - Data Protection Act; Protecting the enterprise
<i>Suggestions for Timetable allocation</i>	1,2: 10 main lesson sessions in class room (part of a maths main lesson?) 3, 6: block of 10 single or 5 double lessons per group. 4: Occasional supervised access to ICT room in breaks or project lessons.	1,2: 3-4 week technology main lesson block (additional technology ML block on power and transport). 3, 6: 6 week block of 1 single lesson per day per group or half year 1 double lesson per group (30 Lns). 4,5: Regular open access to ICT facilities in breaks or as part of some subject lessons.	3,5: 6 week block of 1 single lesson per day per group or half year 1 double lesson per group (30 Lns). 4: Regular open access to ICT facilities in breaks, study periods, or as part of subject lessons.	1,2: Electronics practical and media main lesson (3 weeks). 3,5: weekly double lesson for half year per group (30 Lns) 4: Regular open access to ICT facilities in breaks, study periods, or as part of subject lessons.	1,6: 3-4 week block of 1 lesson per day (whole class) or half year 1 lesson per week. 3: Optional club 4,5: Regular open access to ICT facilities in breaks, study periods, or as part of subject lessons.

“Building Inner Fire”

Independent Working and Learning: Teaching through Projects

By Sibylla Hesse

Translated by Genie Sakaguchi

(This is an excerpt.)

Dovetailing school and life, practicing self-efficacy, learning in an exemplary, long-lasting manner, nurturing the individual, teaching based on projects offers new forms of instruction.

Non scholae, sed vitae discimus We learn, not for school but for life. This phrase is often heard, but in reality it looks more like learning is for school rather than for life. Students cram their vocabulary lists for the test, homework is done to avoid trouble with the teacher, and the main lesson book is often created to receive a favorable mention in the report. Such behaviors will probably never be eliminated from the school routine as long as one does not completely restructure school (for example, school of life) or make attendance voluntary, as does Summerhill.

Yet there are a few forms of teaching that enable us to bring life into the school, or rather, to productively interrelate school and life, and even more, “to build inner fire” (Rudolf Steiner), for example, the student-company (compare with the African business of Fr. Wutte¹) that can accompany the business or social practicum, and teaching based on projects, which ideas will be more closely illuminated in the following pages.

Projects: From Photography to a Japanese Garden

Within the parameters of a project on digital photography, a ninth grade class took photos of all the classes and sold commissioned orders of the photos. The Nuthe River, the body of water closest to our school, was investigated by a class with respect to its physical, chemical, and biological characteristics. A

twelfth grade class completed a class play, including all the related aspects of props, stage construction, costumes, directing, creating the program, and public relations. In a project called “Open Studio” each student could realize his or her idea in wood, metal or clay, having the time available as well as the advice of both teachers and fellow students. Eighth graders visited residents in a home for the elderly over a period of months. Two students instructed a group of seventh to twelfth graders for five periods a day during a project week on cooking and making chocolate candies. A group of tenth to twelfth graders planned and created a school calendar for the next year. Another group planned and created a Japanese Garden of Silence. These are all examples of projects that have taken place at our school.

Under the concept “Project Instruction” (or “Project Teaching”), different people understand different things. Many insist that one can only speak of projects when the themes and methods are freely chosen by the students. Others feel that connections outside of the school justify this label. And others speak of projects when one is unsure of what will arise out of a few lessons, or because they want to support the students on an uncertain course. It should be understood that Project Teaching is instruction that:

1. takes place over a specified number of hours,
2. has space available,
3. is under the guidance of one or more special subject teacher(s) or, when appropriate, specialists from outside,
4. is concentrated around a project and often with a previously-determined outcome,
5. has an out-of-school reference or not,
6. in some cases, uses forms of work atypical of school work,
7. has possibilities for students to make decisions, or to be involved in the decision-making process,
8. has partly presupposed abilities, as well as partly abilities to be practiced or to be newly acquired,
9. is usually concluded with a presentation and an evaluation.

Aspects which are more loosely defined include: questions of elective or compulsory participation, the homogeneity of the participants (or groups of students across different grade levels), the substantive consequences, the sustainability of the results, the documentation of the course of the project, and assessment (in some cases, grading) of the student’s report.

Advantages of Project Instruction

Well-understood project instruction requires a paradigm shift for those who are responsible. While we otherwise have often been the king or queen in our own class kingdom, behind closed classroom doors, now there arise questions of teamwork and different forms of cooperation. This requires thorough planning and arrangements and oftentimes creates friction. In the marionette theatre project in our seventh grade, the children finished the dolls and scenery in the handwork lessons, dressed the dolls under the guidance of the handwork teacher, wrote out the story and practiced effective speaking in German lessons, and thought out the appropriate background music in music class. All this could be achieved only through interdisciplinary learning and working.

Project Teaching allows teachers to offer themes—building a canoe, creating a picture book, setting up a student library, learning to dance—other than their usual subjects and to arrange complex courses of working, such as the planning and development of an object of utility (a canoe) or an exhibit based on a theme of local history. For this last project we worked with a local institution, called “Linden 54,” a memorial for victims of political violence in the 20th century in Potsdam. Places of learning and institutions outside of the school can meaningfully lighten the work of the teachers. Local institutions such as archives, and organizations such as Bund-Jugend (an organization in Germany working with young people for environmental causes), and so forth, are usually very open and ready to help when one wants to do research with children and young people.

Also one can achieve much working together with other schools. A byproduct can be a reduction in stereotypes of “the Waldorf (students)” — these local contacts serve public relations not least of all! And moreover, our children and young people have opportunities to leave the shelter of their own school and anchor themselves more strongly in their part of the city, their own neighborhoods. The support of the parents would be necessary for this. As soon as an out-of-school relationship develops, the relevance for life is enhanced. This works positively on motivation.

Motivation Arising from the Matter at Hand

If someone wishes to create a school calendar, he must concern himself with questions of layout. In making a documentary film, one must consider related media and tasks such as editing, background music, incorporation of titles, and so forth, not because these capacities are in some lesson plan, but because they are demanded by the task at hand. So on one side, school subjects and methods (mathematics, spelling, handwork...) are applied to real life. On the other side, methods and content that are not typical for school, that is, for Waldorf schools,

can be brought in for projects. Interest in these things increases the students' motivation, as does the ability to make their own choices. The meaning of each step in the process arises out of the task—the opposite of learning that is reduced to teaching to the test or cramming unrelated facts. If, however, freedom in working has not been practiced, the unaccustomed freedom can easily lead to too many breaks, as has been observed in Waldorf seminarians. [reference unknown]

In earlier times, our small upper grades were able to get to know each other better and make new friends through projects that spanned across different grades. A student who is developmentally delayed can instruct younger students, a new experience for him—so in relationship to these younger students, he takes up a new, different role from that in which he has been firmly held for many long years together with his class (the shadow side of being together for twelve years).

Further, when the final product of my project will not end up gathering dust on a shelf somewhere, but rather be eaten by others as chocolate candy, or be enjoyed by the school community for years as a place of quiet, then one must really do one's best. This becomes clear to the students. Participation in competitions adds to the motivation.

Engage me actively...

“Tell me, and I will forget it. Show me, and I will remember. Engage me actively, and I will understand it!” (Lao Tse) Project Instruction demands a high degree of independent working and personal responsibility from the students. The experience teaches that the learning efficiency of the link between doing and knowing has a very long-lasting effect. Years later one hears, “We did that once in a project on ...”

In addition, we can bring the students, as consumers of instruction, into the process of forming the lessons, thus practicing democratic principles. This begins when we take up the students' wishes for project themes, continues as the students make suggestions for problem-solving, and ends by easing the teacher's workload. I am not the one who has to correct every page of a growing body of documentation, but rather I can delegate this assistance to another student, even if only the more obvious spelling errors are caught, and confine myself to the final correction. When a student is more competent than I in a particular realm, I can allow myself to be helped, perhaps even work in partnership with a twelfth grader to lead a project.² More and more often I personally use real dialogue—also in my “regular” lessons—to give the older students shared responsibility for our arrangements. This seems to me to be appropriate also in light of the child-rearing practices of parents today.

I can also give up a portion of responsibility through peer evaluations, or evaluation of intermediate results, by fellow classmates. This, however,

presupposes a discussion about criteria for quality. Students generally are inclined to be more sharply critical than to indulge in the infamous “Waldorf praise” (“You have done that very nicely!”). One practices a way of looking at the strengths instead of fixating on the weaknesses. Our goal would be to have the young people even learn to write their own reports, which we would validate with our signature if we thought they were correct. The experience of the Potsdam Waldorf School with end-of-year portfolios in mathematics for grades ten through twelve shows that this is not merely wishful thinking. Now the European End-of-School Portfolio Project (Comenius-EPC-Projekt) envisions the greatest possible independence of the students in its standards for portfolio-reflection and evaluation, and calls upon the teachers to facilitate this competence.³

In designing our concluding reports for our middle grades (in Brandenburg, advanced vocational training for grade ten and high school in grade eleven), we found we could calculate one third of the final grades from the final grades for the projects, and for artistic courses, sharpening our Waldorf profile. With the results of many projects (pieces of artwork, films, portfolios, documentation ...) as direct examples of the student’s accomplishments (compare R. Iwan, F. Winter), many students have been able to get an apprenticeship or work placement.

Through the project presentations that take place at various times of the year, all the students practice the forms of presentation and speaking before a larger audience. Two older students usually conduct the program as masters of ceremony. In the near future we would like to make the monthly celebrations (*Monatsfeiern*) for the upper grades more attractive. Often we enjoy evening-long presentations such as class plays, readings, and inauguration or openings of exhibitions.

Anthroposophical Study of the Human Being as a Basis for Project Teaching

You see, this is what Spiritual Science wants, what Spiritual Science, as it is intended here, can bring about: Effect a consciousness that is not just for the understanding, but that also goes into the feeling life and the will.

To be sure, one hears over and over again the demand, particularly in the pedagogical realm, that teaching should not be just for the acquisition of knowledge, but rather it should lead to capacities, to work, it should build the will. ... To be sure, there is a lot of good will present, when today [1919] people say we should not educate for knowledge, we should educate for the capacity to work, for abilities. But good will is not enough; we must have the strength to enlighten this good will, to bring the light of real insight. ... No, it has to do with

the fact that we must attain the possibility of working with such insights, such imaginations, and such concepts that have within themselves the power to work over into the will, to build the inner fire for the will. This is needed to heal the present that is sick in many aspects, to turn it in the right direction in the second social-pedagogical realm. ...The other realm ... is that, of which I would like to say, it should facilitate “teaching of life.” ... We stand correctly in life when every moment, every day, every week, every year is a source of learning for our further development. We will have come through our school in the best way—no matter how far we come in the school—if we have learned through this school to learn from life.⁴

– Rudolf Steiner

In my opinion, Project Teaching is a form of “teaching of life” appropriate to Waldorf schools. Current themes and methods can always be found in the classes that meet as double periods twice a week, and small teacher-student ratios (we usually have one teacher per ten students) support a wide range of different projects. In the course of the work, resources must be gently used, concepts developed and adapted, steps in the process (for example the purchase of needed material) must be clarified through the comparison of prices. Problems will arise that need to be solved: “Tu-effect” [reference unknown] with a reality-component. A few years ago, under the theme of “China,” middle grades students experienced various projects such as calligraphy, cooking, geography, and building a dragon, so that many senses were activated. The conclusion was turned into a Spring Festival. This form of learning, long-lasting and meeting the requirements of the brain, works with the emotions and involvement of all aspects of the human being. It has to do with exemplary learning within the parameters of an expanded experience of life and demands from all participants their presence of mind. Routine cannot be a part of this. It also connects with social learning, not least of which includes cooperation and giving of feedback.

Adults as well as children and young people can bring in things learned outside of school (for example, knowledge of computers, sports or social capacities), and thereby show their personal competence. This can lead to stronger community-building and raises the visibility of the school; for example, a round bench made of wood lasts longer than the students who built it were enrolled at the school. I can learn to rely on the community in instances where I am weak. For example, in the case where I was lacking knowledge about the creation of a website, a father jumped in, so the responsible student could set up the page nicely according to our specifications.⁵

How did the Waldorf curriculum actually come into existence? Through the interpretation of indications and suggestions from Rudolf Steiner, endorsed by him with respect to the teachers at the first Waldorf school between 1919 and 1924. Over the decades, the modernity of that era was not updated. (U. Buermann gave a concrete example of this in speaking about the electric tram, which Steiner saw as an example of ultramodern technology in 1919, and which today in a lesson on modern technology should be expanded to or superseded by the cell phone.) In the tradition that has solidified [over the years], Steiner's basic approach has slipped into the background, "not to practice from memory what one has learned of pedagogy, but rather in every moment standing in front of the human being to find anew the individual method that applies to just this human being."⁶ Ninety years later we must dare to take up renewal in the sense of the original idea!

Individualization

Waldorf students often come across to the public as arrogant. In my observation, this is because we are used to always being addressed as individuals. "Subordination" is, for us, a foreign word, and may it remain so. Project Teaching, more than any other form, allows content and method to be "found anew" for the participants and current issues to be addressed. For example, a few years ago we had a ninth grade in which the girls experimented a great deal on their outer appearance and strongly sought after role models. We offered a biography project, separated by gender, creating the possibility for the girls to speak in a protected space about the most varied forms of women's lives.

Many Waldorf students complain about being under-challenged in their instruction.⁷ The great possibilities for individualization in Project Teaching help avoid this, in that one can offer tasks for those who can meet increased capacity and responsibility, or allow the students to seek their own tasks, even as far as to co-leadership of a project. In a successful project all the participants experience their own self-efficacy, or self-worth, and then they do not need to dismantle bus stop shelters, for example, to feel that they have left a mark in life.

In a recent upper level Faculty Meeting, we considered whether projects might be allowed to fail, and we came to the idea that one must distinguish between productive and unproductive failures. The failure of an entire project, perhaps because of serious planning errors, leaves only frustration for all concerned—that doesn't help anyone. But in contrast, when someone takes responsibility for the "screw up," perhaps he or she can gain the impulse to work on the causes and, as Beckett said, "fail better" the next time—for the results are never perfect. That requires resilience: to learn how to tackle problems alone, or, as the case may be, to get help in a timely manner, to iron out mistakes, not

to let oneself be discouraged by setbacks, in short, to strengthen one's self-competence.⁸ The foundations here are ability to communicate as well as trust in mutual readiness to help.

Practical Implementation

Looking for ways to refresh simple academic skills, such as finding important information in a text, and other skills, we, the faculty at the Potsdam Waldorf School developed this Project Teaching program, at first with thirteen periods in the week, which was too many for single projects, then two running parallel made ten, now eight periods in the week. How did we make the class time in the schedule? Going over the all-school schedule, we gathered two hours from religion (compulsory only up to grade six), two for eurythmy, two for music,⁹ and two to four for art—and pooled them in such a way that we had a double period every day. Later we added eurythmy and music back in as electives.

In the middle grades (grades seven through nine in our school), the projects take place Monday morning, Tuesday afternoon, and so on. This alternation allows the art and handwork teachers to take part in both middle- and upper-grades projects. The afternoon project periods can also be used for excursions.

Butter Sandwiches and Raspberry Ice Cream

The requirement that each student should have completed particular projects (of art, nature, science or the humanities) was later rejected by our faculty, because we do not offer the same things every year.

One concern turned out to be valid: What would we do if someone followed his/her own special interest and always chose, for example, only eurythmy projects? Indeed, we did have this situation. Or if someone always enrolled in projects with the character of raspberry ice cream, that is to say, something catchy and apparently without further demands, instead of biting into something requiring a bit more chewing effort, with the character of a butter sandwich? What would we do if, in the elective projects, the offers assumed to be more strenuous or difficult were not taken up? This was our pragmatic solution: Each student has three free wishes, and often he/she finds the right pedagogical place with wish number three. We allow specializations when they are not over-balanced. In individual cases we might counsel the student to the effect that he/she might choose a project that is richer in content or more demanding. But self-responsibility also includes the possibility that the students do not want to perceive this. Nonetheless our goal remains that the adolescents more and more take command of their own learning biography.

Portfolio and Presentation

The portfolio offers comprehensive possibilities of documentation through the selection criteria, evaluation, personal review, and awareness of the learning process. Often, however, another end product stands in the foreground, so that the reflective aspect lives more in conversations. When a student has chosen a project and then he/she cannot participate in other ones, they still like to know what they missed. For this reason the presentations arouse a great deal of interest: What have my classmates accomplished in the projects that I could not take part in? How did they do it? What obstacles did they have to overcome? Here real interest arises.

After a lot of work, but exciting and diverse, and after one has acquired the forms of working with the students, a very rewarding thing happens: This is the short version of project instruction from the point of view of a teacher. In the beginning and with younger classes project learning requires a greater number of teachers to guide or lead the projects, because many different, unfamiliar activities are running parallel. Courage is also needed, for one does not always have everything under control, and must be constantly learning oneself. But the process of working together can be highly satisfying and, on all sides, “building inner fire.”

Notes

1. See Nyendo: “Service in Africa,” in: *Erziehungskunst* 1/2010, page 33f.
2. See “Students and Teachers. Report of an Experience,” S. Hesse with Sebastian Meuren, Arne Döpke, Claas Beck, in: *Erziehungskunst* June/2005, pages 649–654.
3. See EAP/EPC Users’ Handbook; in preparation at the time of this article. A report was to appear in *Erziehungskunst* June/July 2011.
4. R. Steiner: *Idee und Praxis der Waldorfschule* (GA 297). From a lecture given on September 24, 1919. See translator’s note below.
5. See our second project on the DDR under: <http://umwelt-ddr.argus-potsdam.de>.
6. R. Steiner, GA 297, page 152.
7. See N. “Handwork: In Need of Reform? Agenda for a Reform of Waldorf Schools,” in: *Erziehungskunst* 6/2007, pages 691–693.
8. See Götte/Loebell/Maurer: *Entwicklungsaufgaben und Kompetenzen. Zum Bildungsplan der Waldorfschule [Developmental Tasks and Skills: Towards a Building Plan for Waldorf Schools]*. Stuttgart, Freies Geistesleben, 2009, pages 170 and passim.
9. Our considerations were that there was a large gap in musical abilities among the students and we wanted to avoid compulsory eurythmy.

Translator's note: Footnotes 4 and 6 refer to a book by Steiner, *Idee und Praxis der Waldorfschule*, (GA 297); a lecture from September 24, 1919. I could not find this book in English. Neither CW 297 (*The Spirit of the Waldorf School*) nor CW 297a (*Education for Life: Self-education and Educational Practice*) seem to be the same book. CW 297 does not have the lecture of 9/24/1919, and I cannot locate an on-line version of CW 297a.

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I Question, Therefore I Am

By Henning Köhler

Translated by Genie Sakaguchi

In the first period of his life, a human being is given up entirely to questions. This circumstance is scarcely noticed. Otherwise the dispute over the “I” would long ago have taken a different course, for only an “I” can relate to the world with questions. This is doubtless what newborn children do. To exist without the “I” is to exist without questions. Our cat exists without questions. Sometimes I envy her for this. But a human being is different. He comes to himself because the world opens up to him as a space for questions.

Certainly one must distinguish between concrete questions and the philosophical “being-in-the-world” (of Maurice Merleau-Ponty). In the first months of life the child has no questions, and does not ask any. He embodies the question’s mode of being. But as soon as he can speak, thousands of questions well up out of him. When young children bombard us with questions, they do not do it mainly to receive answers, but rather to enjoy the royal act of asking questions: I question, therefore I am.

Through the teenage years, asking questions for the sake of the question has an important role in establishing self-assurance. Adolescents can react very ungraciously when the adults are constantly “hanging out” [“showing off” or “putting on”] their wisdom, as one of my daughters liked to put it. It is always much better to explore a question together rather than to supply finished facts.

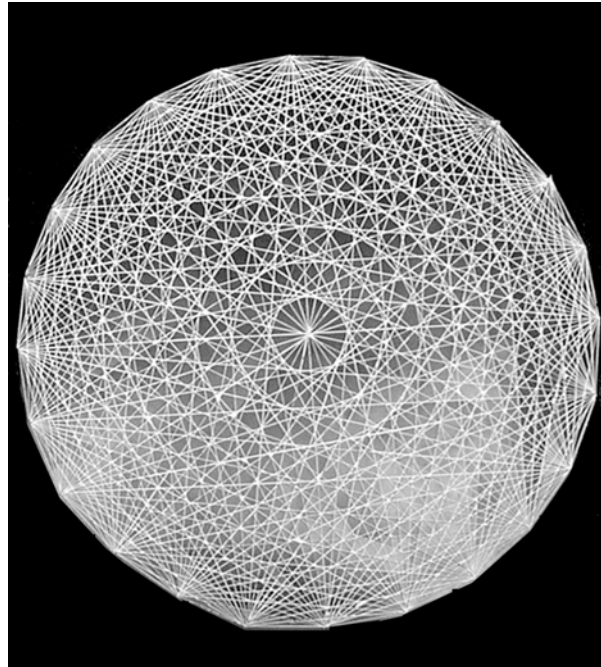
To ask questions is the original, open attitude towards learning that we lose when we are overtaken by the desire for finished answers and the urge to identify and categorize things. Through the new media, the problem has reached heretofore unknown dimensions. The sociologist Sherry Turkle has noticed that her students no longer think over questions. “They search Google and find one out of many answers that they then accept.”

Questions and wonder are closely related soul impulses. The archivist in us is encouraged by the act of collecting retrievable knowledge. The more knowledge and power the archivist accumulates, the more we lose the capacity to wonder.

For the sake of success in school, children today are compelled to get out of the habit of asking questions and experiencing amazement to their hearts' desire. One expects that they learn answers by heart. Facts. Rules. Formulas. Scarcely anyone stops to think how tragic this is. Answers are the gravestones on the graves of buried questions. When the question is past, we are moving in a dead zone.

Recently someone said to me, "As soon as I believe I have understood something, ten doors open up to new questions." This was a human being for whom his school years and university studies could not drive out the true philosophical spirit. He had preserved the questioning—childlike—relationship to the world. Or, as Johannes Stüttgen put it: "A mystery gets larger when one goes into it."

After a successful schooling, the students would sum it up in this way: For many years they never stopped being amazed and had learned this above all—that learning is the most beautiful thing in the world. Other than that, the head is free and the heart is full—namely, full of questions.



Technology and the Celebration of Work as Developed in Waldorf Education

By David Mitchell

Presented in Norway, translated by the author

We live today in an exciting, fast moving, and astonishing world! Rockets have lifted men and women across 230,400 miles of emptiness to explore the desolate, crater-pocked landscape of the moon. Machines have been designed which allow us an unprecedented ease of living. Time is like a snowflake in our hand. It disappears while we are deciding what to do with it. Our work week is shorter than ever before in history, and we find ourselves with large amounts of leisure time. This allows us more time to confront ourselves! It also presents us with interesting problems! How do we fill this time? What is the relationship between our thinking and our will life? Can we use our thinking creatively? Are we self-stimulating and able to continually educate ourselves? In this article I would like to explore the relationship between creative thinking and the ability to ‘do’ work within the realms of technology and education.

Today’s students need to be made aware of the importance of cultivating different thinking styles at a time when mankind’s left brain activity is promised a rest. Neurocomputers, designed to imitate the structure and functioning of the human brain, are being developed to take over everything mundane and repetitive. Already we have computers that can speak, follow voice instructions, manipulate immense lists of facts, make music, and perform robotic task—all more error-free than humans.

At the same time we are exposed to telecommunications which connect us almost instantaneously with events as they unfold around the globe. Time and space have become compressed, human potential has been expanded, and the world meets us in our living room! We are both informed and comforted. My house has a heating system which is controlled by a miniature computer

thermostat. I program it and, as the advertisement contends, I won't have to worry about being too hot or too cold ever again! We owe this all to technology.

We in the West are witnesses to the fact that, in a single generation, technology has changed our way of life. Yet, how many of us really understand this technology? More importantly, what is our responsibility as educators to bring technology in the correct way into our curriculum? How are we encouraging inventiveness and fostering a love for work in our students?

No one can deny that life has become easier on the physical plane as a result of technological innovation. Some regard technology as the universal benefactor, the distributor of science's bounty, successful in almost every undertaking to which it has turned its hand. However, a shadow side exists, which has become more and more apparent in recent years. The byproducts of technology have spread pollution on such a scale that scientists warn of an impending danger to all life on earth. It is a paradox that the more time we have for ourselves, the more mechanized our civilization, the more hectic and stress-filled our lives have become, as well. We find that we need the extra hours we save each work week merely to rejuvenate ourselves physically and mentally. How does education help us to deal with this?

A task of education must be to aim technology in the direction of the long-term well-being of humanity. To do this one must develop a curriculum to discuss the above questions, recognize one's motivations, and be able to exercise moral judgment.

During recent years there has been much soul searching with regards to the aims and direction of modern education. The ancient Greek civilization knew its educational aims. The foundation for all learning was wonder—otherwise there could be no impulse to explore. In the early years of a child's education, poetry, music and movement were developed so that in more mature years there would be an understanding for mathematics and philosophy. To guide the social life, the religious leaders gave moral instruction through the great dramas written by Euripides, Aeschylus and Sophocles.

In the 17th century when the modern scientific outlook was born, education took a new direction. Descartes gave the Western world *defined thinking*. He said that "consciousness is attributed exclusively to the brain and nervous system."

In the 20th century, educator and philosopher Rudolf Steiner said that if a person reflects upon the powers of his mind or soul, he will soon discover that he has the capacity of expressing himself in three different soul worlds—thinking, feeling, and willing. We can experience many different kinds of thinking, from pure logical thought to the rich, imaginative pictures of new ideas. The realm of feeling can be experienced as cultural appreciation or a spiritual experience of ecstasy or devotion. The will life exists from instinctive impulses to conscious

deliberate acts. An educational task is to lead the will from the control of the feeling into the control of the thinking.

All education starts with the teacher's inspiring interest in the feeling life of the students. It then goes on the activity of the limbs, and lastly, the thinking is stirred. Thinking is objective, conscious, analytical. Feelings are subjective, personal, colorful and less conscious. The life of the will is very subjective, individual, and the most unconscious. Wisdom is acquired by a process of reflection made possible by a short pause in will activity. Waldorf education strives to educate and harmonize these three realms, but it is in the realms of thinking and willing that we find the seeds of technology. It is man's thinking and inventiveness that has brought about technological innovation. Curiosity, playfulness and imagination are qualities that should be encouraged in education if we wish to perpetuate technological growth.

The process of technological innovation depends on intellectual spirit—on the willingness to face change, to take risks. It requires creativity, analytical skill, and an independence of mind.

— Frank Newman

Schools Need to Help Cultivate a Love for Work

At the beginning of this century, most students came from a rural, working environment. Their father was a farmer or a laborer. The purpose of going to school was to learn to think. At home they were occupied by activities which exercised their will and made them feel useful. They learned to 'do' things out of necessity.

Today, most students come from an urban setting and their parents leave home to go to 'work.' The activity of the parents' work is invisible to the child, and the direct results are not always experienced or appreciated by the family. Life and work have become abstractly separated.

At the same time the media is omnipresent and fills us chockablock full with information. Today, a type of pseudo-thinking is learned outside of school. We are fed lots of information, but information is not education. Information does not properly exercise the will, nor is it satisfying for the soul!

The heads of many youth are filled with trivia; they have lost contact with real work. This task of learning about 'work' has been passed over to the school. Today's students need to be taught to use their capacities, to apply their thinking in such a manner that they are able to do something with it. They are desperately in need of developing practical skills and building up their self-confidence and independence.

Waldorf Education

Thought activity is cultivated through an approach to the subject by which the phenomena are studied and evaluated before conclusions and theories are drawn. This process leaves the student free to develop and exercise the capacity for judgment and discrimination. Work in algebra, Euclidean geometry and bookbinding strengthens the logical thinking, while projective geometry and experiencing the history of mankind stimulate imaginative pictorial thinking. How the teacher phrases the questions which put the student's mind into activity is all important. He or she must train the student to look at situations from various points of view and become able to use synthetic and analytic approaches to problems.

Thinking is not, however, the only part of an individual to consider in education. Adolescents often arrive at their high school asking the following questions: What really matters? What is the point of it all? Who am I? To deal with these questions, the teacher must penetrate beneath the surface of the subject. The students must be stirred—their enthusiasm must be kindled. They must care for what they are doing and desire to do their best at it. Waldorf education strives to educate the feeling life as well as the thinking. The tools they use are drama, painting, cultural activities, music, sculpture, art, and the time the teacher gives to the students to express themselves.

Once the student has been connected to the subject through his feeling for it and awakened in his thought life, then the knowledge can flow into his will, into his active deeds. A Chinese proverb states the following:

When I hear, I forget.
When I see, I remember.
When I do, I understand.

In Waldorf education the education of the will is an equally important part of the threefold approach to education. In the academic area, the students are asked to write their own main lesson books and create their own projects. In the practical realm, we offer courses in house building, stone carving, pottery, blacksmithing and other crafts.

Idealism is kept alive by the curriculum where all the subjects are centered around the human being. In the main lessons on art history, literature, poetry, music and architecture, the evolution of mankind is traced from ancient times through the Medieval and the Renaissance up to the Modern Age. A life philosophy is evolved where science, art and religion are not artificially separated; the qualitative as well as the quantitative is cultivated. When the students study the computer, they should also be able to learn something about themselves!

Steiner identified two great obstacles which face adolescents, and he offered suggestions as to how a curriculum could be formulated to assist the youth in meeting them. The first is 'sexual lust,' which can be met in them by keeping them busy with meaningful tasks, by encouraging them to strive for beauty, and by keeping their hands busy with such Waldorf school subjects as handwork, jewelry making, blacksmithing, stone sculpture, woodcarving and joinery.

The second danger is the 'lust for power.' To keep them from falling victim to this, the teachers must inspire the teenagers' thinking. They must bring great ideas to them and moral thoughts. They must keep the intellect moving and help them develop altruism. They have the task of helping the students come out of their self-centeredness and of guiding them to help others through service-motivated activities, such as cleaning trash from a road, clearing a forest path, helping at a home for the elderly or working on a farm.

To be absorbed in creative activity is the real fun of life. This process creates rather than depletes energy. One can feel relaxed, in control, at peace and in harmony.

The puberty experience is one of death—the child dies, the adolescent is born. One of the most powerful agents in overcoming these death forces is to allow the children to model and carve, to transform material enlivened by the forming power of their own human spirit. In carving and modeling the children can find an excellent outlet for their creative energies. It is difficult, if not impossible, to be absorbed in pursuing a meaningful goal and to be depressed at the same time.

The crafts program of the Waldorf school is an example of how this takes place. Both arts and crafts work as a preliminary stage of technical education and are considered indispensable if the pupils are to engage with social competence in the work processes of a technical culture.

The Case for Crafts

Mythology is full of stories connecting weaving and knot-tying with wisdom. A few examples are the puzzle of the Gordian knot which Oedipus solved and the thread trailed out by Theseus in the Labyrinth on Crete, with its mysterious thousand paths. The string and cleverness allowed Theseus to defeat the Minotaur. Athena, called the Inspirer of all arts and crafts, was born out of the head of Zeus and ruled over the world of thoughts. It is the crafts which teach the students to meet and overcome problems. They become engaged in an activity which on the one hand focuses them, and on the other hand can lead them through the eye of the needle whereby they become transformed by the process.

Practical activity builds confidence in the students. The students need to experience that work is wonderful, that work can be a joy. Confidence is the key

to academic success. By engaging in practical tasks the students ‘learn how to learn.’ The more interests and skills we can develop in our students, the more fully they will participate in life.

There are stages for each activity. First the student must think or imagine the task, then he must prepare, research and experiment. This is followed by a very important incubation period where the idea is allowed to rest so that new directions may emerge. Finally the task is begun, completed and reflected upon. Lastly any modifications that need to be made are done. These stages exercise both the thinking and the will life.

Examples from the Waldorf Curriculum

Education of the human being is meant to be a lifelong learning process, especially in the vocational field, rather than a cumulative addition of pre-determined knowledge and skills. When we take the ability to learn and combine it with self-confidence and optimism, we have the capacity for lifelong learning. How admired are those individuals who are able to learn something new up to the day of their death!

In the classroom we recognize three groups of students. There are those who make things happen. Then there are those who watch things happen, and finally there are those who wonder what happened! Those students who are strengthened in their will activity are usually the ones who make things happen. They are confident in themselves and not overly concerned about making a mistake. We must teach our students how to adapt the mistakes which they make, rather than start over again. The students must not be overly concerned with making mistakes because fear of mistakes will cripple their progress. The only way to

avoid mistakes is to avoid action. This is not something we want to encourage. What we want is courage and confidence, and this has been observed in those students who have mastered practical activities.

The teacher’s proper attention to detail in practical skills during the elementary school years can metamorphose into intellectual dexterity in the teenage years. In the early years in a Waldorf school, work is developed as an outgrowth of play. In these primary years the teacher sets the foundation for the high school. The student should leave the middle school with a craving to know, an insatiable curiosity



about everything that goes on around him, such that he can convert this curiosity and craving for knowledge into still further knowledge.

In grades 7 and 8 the students work with wood, metal, stone and fabric. The woodworking includes carving convex and concave objects such as bowls and spoons, each of which has been designed with functionality in mind. They also meet stone carving, in a material such as soapstone which they craft into an animal of their own design. Careful observation is developed as the children chisel, rasp and sand toward completion. In craft work the key to development is learning to be patient. Students are asked to remember that the chick arrives by hatching the egg, not by breaking it open with a hammer.

Woodworking is taught from grades 4–12 and demands the perception of the unique characteristics of each piece of wood as the different quality, texture, color, density are examined. Measuring, cutting dovetails, and fitting joints merges with carving, rasping, and sawing wood. In carving a piece of twisted elm, one learns to find form hidden within the grain and thus allow it to emerge out of the wood. Each wood requires a different blade or gouge stroke. Each wood reveals to the carver its fast or slow growth, its moisture or dryness, calling for varying degrees of accuracy and finish techniques.

Copper work in grades 7–9 initiates the pupils into working with metal. In woodworking the students had a close connection with the source of the material they were fashioning—the tree. However, copper is a product of a technical process which is most likely unknown to them. Transforming a flat piece of sheet copper into a vessel by series after series of carefully-aimed hammer blows while shifting it spirally across the form, must be a slow, flowing process or else the material will become too thin. The soft, red glow of the copper may warm them but they immediately feel its hardness and rigidity. The noise of the hammer striking it in a hardwood mold is sharp and assaults the ears; the odor of the hot annealing metal irritates the nose. The senses are fully engaged.

Their first task is to smooth the edges with a file; then it is textured with light hammer strokes spiraling out from the center on a hard steel form. Only through rhythmical beating does it soften and conform to the craftsman's intended shape. Then after continuous pounding it becomes hard and brittle and needs to be softened again by fining, followed by quenching in water, whereby it abruptly changes color. Then the hammering continues until a small bowl is created. Finally it is buffed and polished to a high luster. The technique is repeated in more complicated manners for upper grades for jars and vases and ladles. The students learn that rhythm saves strength. Ten days of hammering is needed to make a vase. For twenty hours each stroke must be identical to the one before it in order to produce a beautiful form. Stamina is developed. Working with copper develops a feeling for form and space as well as rhythmical mobility.

In the pottery shop the students dig their hands into a tub of moist, brown clay. It is cool, heavy and malleable. Slowly they exert pressure from the outside and it is turned into a sphere. They press their thumbs into one side and press a hole in it and turn it so that the walls are proportional. A vessel has appeared—and this was a lot easier than with copper! The selection of glazes and firing techniques is an exploration of chemistry. There is a lot of room for trial and error, for experimentation.

Blacksmithing in grades 8–12 develops character as well as manual skill. Respect for the power of the red-hot metal comes quickly to the aspiring blacksmith, and there is no time for timidity because the metal has to be worked with spontaneity and focus. Life today is also fast-paced and demands immediacy. The worker must use his strength energetically, even explosively! There is no room for hesitation, because once the metal cools, it loses its plasticity. The time is very short. The look on a student's face when she transforms a 3/4 inch square stock into a multiple twist pattern with relative ease is a sight to behold. Confidence is developed. The forge trains powers of decision. The blacksmith learns the fundamentals of the craft: keeping the forge fire burning, not allowing an oxidizing flame, handling the tools in a proper fashion, and developing an understanding for the laws of metallurgy.

In a Waldorf high school you may also find other practical courses such as house building, carving, spinning, dying, bookbinding, sewing with both treadle and electric machines, locksmithing, paper making, shoemaking, surveying, soap making, automobile mechanics, batik, calligraphy, stained glass making, stone carving, furniture making, pottery, and jewelry making. All students participate in various phases of these courses, and as they progress through the school, some might focus on one craft to develop an expertise in it.

In the high school everything that man himself has created through nature and the recognition of its laws should be penetrated with comprehension. Technology has issued from such comprehension. Steiner said that each man who uses a streetcar should know technically what happens so that he really understands how motion is accomplished. He said, “We are living in the midst of a world produced by man, formed by human thoughts, which we use, and which we don't understand. This fact—that we understand nothing of something which is formed by man, of something which is basically the result of human thoughts—has great significance for the entire sphere in which the human soul and spirit lives.”

Academics and Technology

The academic classes in Waldorf schools also pay attention to technology from grades 8–12. For example, in the 9th grade history class, the students study the Industrial Revolution. Through vivid pictures they learn from their teacher of

life in the mines, of child labor in dark, crowded English factories, of oppression and suffering. They learn of agricultural invention and the promise of a better life. The study of the Industrial Revolution brings young people into the issues of their times. Concerns for the underprivileged, the question of power and authority, and the overwhelming domination of economic values over society are issues that today's Waldorf high schools have to confront.

The physics classes in the Waldorf schools are dedicated toward giving the students an understanding of the telephone and the steam engines in grade 9; weaving, spinning, turbines, the internal combustion engine, the electric motor, and technical mechanics in grade 10; electricity magnetism and atomic energy in grade 11; optics, photometry and chemical technology in grade 12.



Computer Science

When we think of the word ‘technology,’ the word ‘computer’ is often the next word that comes to mind. The following course description is for readers of this article who consider themselves avid technophiles. It illustrates how an 11th or 12th grader might find a computer course in a Waldorf school.

One course that I was instrumental in designing had three fundamental components. The first was to identify the myths and realities about computers. What is it that they do and what do they not do? The next steps were to discuss linear thinking and flow charting—the students could learn how to think like a von Neumann computer! Then flow charting moved into programming and the concept of a procedural language. Artificial Intelligence would be discussed,

and the students would write and apply a simple program. The sociological implications of computers would also be debated.

In the second section on computers, the students would investigate programming and the nature of computer languages. Students would write and debug a number of small basic programs. They would work through a flow chart for making chocolate-chip cookies and for starting a car. They would also be called upon to imagine themselves as bankers, writing a program to develop interest rates and percentages on borrowed money. This section involved the history of the computer including the biographies and work of Pascal, Babbage and Lovelace. Programming concepts would be addressed and a program for a simple well-known game like Tic-Tac-Toe would be written and debugged by the students. Machine and assembly language would then be introduced as would fourth-generation languages. The students would then be given many exercises in practicing programming and finally taught how to recognize and overcome computer addiction.

The third component of the introductory course involved looking at the inner structure of a microcomputer and the way in which machine languages work. Students would review Boolean algebra, de Morgan's Law, and the binary number system. Using wiring boards (called breadboards), chips, switches, and wire, they would build a one-bit adder, an R-S flipflop using only NAND gates, and four bit J-K shift registers. They would take on the study of logical propositions and logical manipulation as a new kind of mathematics. Then they would take breadboards and build simple and complex circuits. This would give the students a practical experience in building their own computer.

These three sections would be interspersed with trips to a silicon-chip factory, a company using industrial robots, a corporation such as a national motel chain which sets all its reservations by computer, or a large store which controls its inventory and sales through computer.

Thinking is fructified by practical activity.

Recent neurological research has confirmed that mobility and dexterity in the fine-motor muscles, especially in the hand, stimulate cellular development in the brain, and so strengthen the physical instrument of thinking. Many forms of thinking (analytical, synthetic, teleological, causal, etc.) need to be learned in today's complex society. It is our task as teachers to apply these various thinking techniques relative to the subject matter we are teaching.

The principal good of education is to create men who are capable of doing new things, not simply of repeating what other generations have done.

— Jean Piaget

In cognitive development Waldorf schools aim toward developing the training of judgment and discretion. The capacity for conceptual thought lies on a higher level of cognitive development. The process of abstraction can be exercised by having the students analyze their own work. The method of examining why a piece of copper became too thin in a particular area or why a joint of a compound dovetail didn't fit lends itself to such mental evaluation. Self-observation, self-evaluation, and the capacity to take on responsibility are characteristics of personal growth.

Skill learned in the crafts becomes the development of practical consciousness. This practical consciousness has its genesis in an increased power of observation. The training of the power of perception is extended in the upper grades to precise observation.

Handwork causes chemical crystallization in the body. Physical activity breaks it up and brings about a sort of rebirth or surge of energy. Hence there ought to be a conscious rhythm of intellectual and practical activities throughout the school day so that the students can maximize their learning potential.

Extracurricular Trips and Projects

Waldorf schools find it positive to incorporate trips into the curriculum. A week is set aside at many Waldorf schools during which time each high school class has exposure to a different activity. The 9th grade spends a week working on a farm. They learn about the economy of the farm, working with animals, and the sale of byproducts, and they participate in all the practical work. They develop an appreciation for the rhythms necessary for working such long days.

The 10th grade spends a week working on forestry projects, clearing a mountain trail, building lean-to's, or surveying large land areas. They learn to identify trees and appreciate the diversity of wetlands.

The 11th grade is projected to go to a factory and join the work of an assembly line for a week. In the evening there will be talks by the company president about the goals, the treasurer about the bookkeeping practices, the labor union leader about the working conditions, and the shop stewards about production levels.

The 12th grade will take on a task of social significance such as insulating the homes of inner-city slum residents, or a project on behalf of the local city with regard to homeless shelters, old age homes, retirement homes, etc.

In addition to the above, class-related trips based on technology are planned for every class so that they can connect what is happening in the classroom with activities that are happening in their immediate community.

Conclusion

The task of the teacher today is not to structure the minds of the students, but rather to enable them to grow to new dimensions—dimensions that may even exceed our own understanding. In such a manner can the teacher of the present serve the future. Teaching must become a continuous learning process for the teacher as well as for the student.

Educators can learn a lesson from examining industry. The 3M Company went from producing sandpaper to roofing shingles, to scotch tape, to magnetic tape, to photocopying and then to reflective signs. All of these products require a common skill: how to apply a closely-controlled layer of material onto a flexible base. The creative thinking which evolved new products at 3M can be stimulated by a proper relationship between thinking and will activities in high school.

Living is learning. When we are most alive, using most fully our energies, senses and capacities, we are learning the most.

– John Holt

Self-esteem is central to the whole problem of security in our modern world. Self-esteem is also necessary in order to secure any type of success in any endeavor. No one is capable of reaching beyond the limits of his own self-imposed boundaries.

Practical subjects, artistic lessons, and activities involving the hand can no longer be seen merely as supportive and enlivening factors of the curriculum. Rather they are absolutely necessary in the education of a youth facing a complex and changing world.

By the time a student graduates from high school, he or she should have made a connection with the main technologies of our age from the computer to the understanding of an internal combustion engine and an understanding of what happens when we flip a switch and the lights go on! It is necessary to understand these things to feel at home in the world. Otherwise we are not able to live in full consciousness. The ability to do, to be productive and well-rounded produces the very independence we want in our students.

No individual will be able to retain his independence in our contemporary working world unless an emancipatory education has endowed him with the practical capacity to do so. An education is emancipatory only when it enables youth to expand and stabilize their individual personalities before they confront the conditions prevailing in a civilization dominated by technology. Education must train students to participate responsibly and creatively. We must see the technical and social changes of our time as a stage in the development of mankind.

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Will-Developed Intelligence:^{*} Craft and Movement Gesture in Education

By Bernard Graves
for The Hiram Trust, England

How do you do? More to the point, how do you learn to do, and what do you learn by doing? These questions challenge us today to find and demonstrate pathways from ‘doing to thinking.’ Doing implies movement of some kind, both inner and outer. And thinking about doing necessitates some degree of awareness of ‘movement gesture,’ a largely unconscious activity.

To move or not to move: hyperactivity and lethargy

It is clear that in a society becoming ever more sedentary and in which the keyboard is replacing the traditional pen, the child’s need for ‘primary engagement’ through the sense of movement and gesture is being curtailed and undermined. Yet children and adults are involved in many daily movements, usually requiring transportation, to meet appointments and deadlines.

Instinct-led and compulsive movements are being written into daily life experience. Uncontrolled and aimless movement contrasts with the time spent in exercising at home or in the gym, to which a separate and measurable amount of time and income is dedicated. Alongside restricted play and formalized recreational activities, moving images in addition mask immobility and present a kind of barrier to direct engagement in purposeful activity. The overwhelming experience is of imbalance and a fight against the sapping or stunting of both life and soul forces.

Redressing imbalance

Life forces tend to be restored more consciously nowadays in a variety of ways: walking, gardening, holidays, health treatments. Plenty of suggestions

^{*}The phrase “Will-Developed Intelligence” was coined by David Mitchell and used as the title of his book co-authored with Patti Livingston.

are given in the weekend newspapers and other magazines. The soul forces of thinking, feeling and willing, however, are not collectively acknowledged, let alone nurtured so as to strengthen, refine and harmonize them.

Will, as shown by Steiner in *Theosophy*, *Study of Man* and *Occult Science*, is a soul force that can be active in different parts of the human being.

1. Its most important activity is in physical energies that initiate 'movement' in the body.
2. Further, it can bring our life of 'feeling' into movement and so create and kindle 'imaginings.'
3. It can stir and activate our 'thinking pictures' to the point that they are no longer mere reflections, copies of the outer world.

Working 'willfully' and creatively with our thinking can enable this activity to become alive and assume an individual character. In this way such great thinkers as Goethe, for instance, could move beyond the botanical point of view of the plant world and come to an experience of the Archetypal Plant.

Rudolf Steiner mentioned on a number of occasions that he attributed his own creative thinking possibilities, his ability to come to a perception of the inner nature of things, through the efforts of will needed in the use of his muscles during adolescence. In particular he recalled the beneficial efforts of work such as chopping and sawing wood, digging and harvesting potatoes. "The more we take into account that intellect develops from the movements of the limbs, from dexterity and skills, the better it will be." (Rudolf Steiner, *Basic Course*, 1920)

However, comments made by Rudolf Steiner in 1924 during the 'Curative Course' indicate that already then he perceived the lack of practical ingenuity skills. The general teaching and educational practice of the day, he maintained, reflected the general state of 'consciousness.' Out of 800 children, only a handful could be said to have a practical aptitude for work. In referring to those children, Rudolf Steiner said:

Living in the time of the flowering of intellectualism, the soul/Spirit or (astral-ego organization) of the children cannot penetrate the muscle system, it only connects to the bones. The result of this later in life is an even more dry, intellectual, dead thinking and a general life style of materialism. ...A healthy way to develop the intellect would be, as far as possible, through the will. This we can do only by passing via the artistic to the developing of the intellect.

– Rudolf Steiner, *Study of Man*, 1919

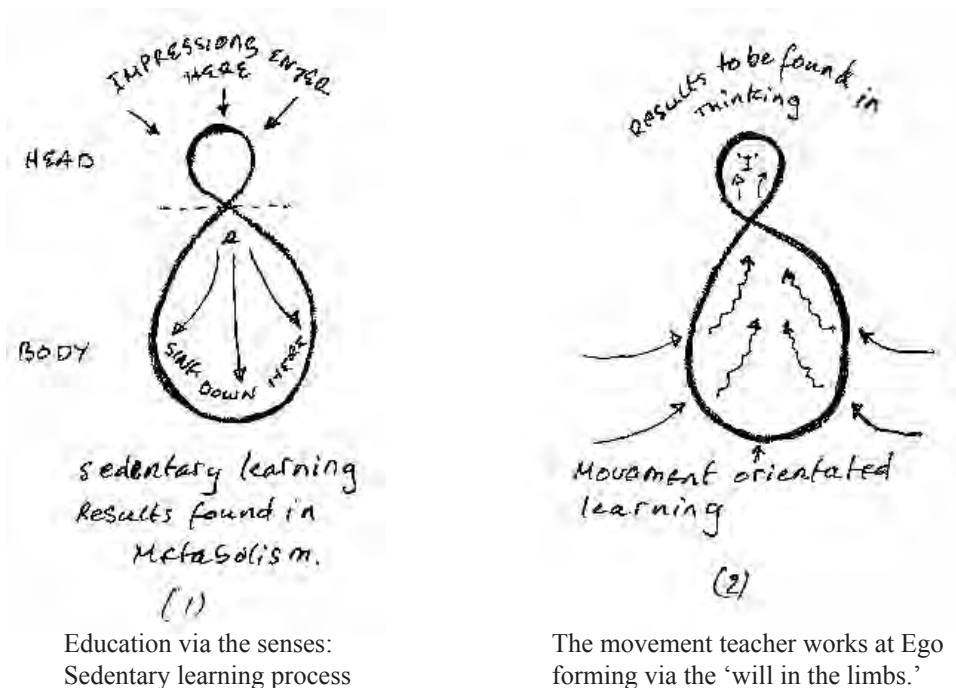
'Intellect,' as one of our most noble faculties, can only incline towards this type of materialism in the absence of aesthetic sensibility and qualities of will.

‘Will,’ on the other hand, inclines towards the spirit and requires anchoring and bringing into the world. Bridges have to be built between doing and thinking and from thinking to doing.

Again, already at the beginning of the century, Rudolf Steiner was painfully aware of the growing separation of the soul forces. He made several concrete efforts to address this problem, including Waldorf education and the ideas expressed in the ‘Agricultural Course’ regarding nutrition and its potential to assist in the integration of soul forces.

Waldorf pedagogy

One of his fundamental precepts is that when we engage the child in physical, practical activity, such as handwork or craftwork, we are working on the ‘soul spirit nature’ of that child. However, when we address the ‘soul spirit nature’ in storytelling, for instance, the healthy results are to be found in the ‘bodily organism.’ For the adult to form ‘sound judgments,’ to have ‘balanced thinking,’ depends far more on whether a child was taught to use her/his hands and fingers in a right practical way than as the result of doing ‘logical thinking’ exercises in later life. (*Waldorf Education for Adolescence*, chapter 4)



Man Hieroglyph of the Universe – 1920

‘Knitting supports a healthy development of thinking as it emerges in the adolescent years.’

In the Curative course, Lecture 5, there is further support and evidence of how 'will begets intelligence.'

*A Picture of Fourfold Man and Its Differentiation
with the Body and Head*

Picture 1 shows general path of evolution from Saturn > Sun > Moon > Earth. The physical body is depicted as the oldest, the wisest member, with the Ego depicted as the youngest and least developed member.

Past

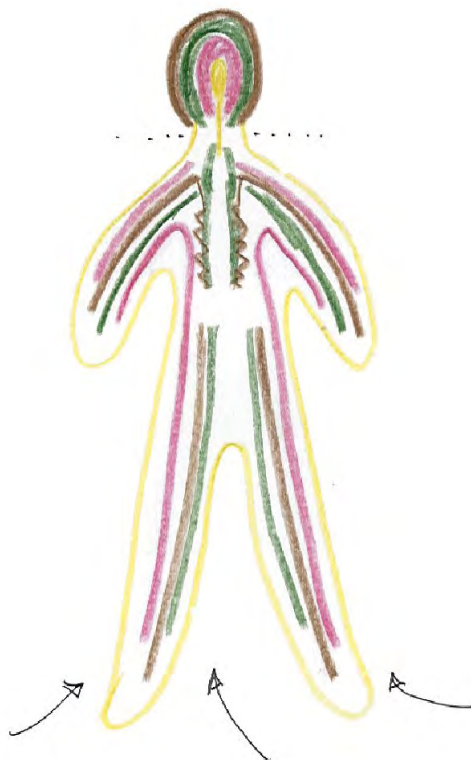


Future



1. Physical body outside / Ego inside
 2. Ego outside / Physical body inside
- Evolutionary development: Physical Body – Life body – Sentient body – Ego
Saturn – Sun – Moon – Earth

Picture 2. Here we have something that belongs to the 'Will Sphere' and consequently points to the future.



Transformation and metamorphosis
with the body and head:

1. Head, a formed structure. Ego within small and undeveloped. The task of educator is to awaken the Ego here.
2. In the limbs the Ego spirit is very large and spread out over the surface of the body.

As movement-oriented teachers, we are Ego-forming via the limbs, working through the limbs rhythmically—the Craft Gesture. Kinetic education helps to develop the brain and develop the as-yet undeveloped Ego principle within the head.

Today, some eighty years since the *Study of Man* lectures, neuro-physiological research supports what Rudolf Steiner put forward about movement and the development of the human being. Such research has reached the general public in works such as Frank R. Wilson's *The Hand: How Its Use Shapes the Brain, Language and Human Culture* (New York: Pantheon Books, 1998) and the abstract, "The Real Meaning of Hands-on Education" in *Rudolf Steiner Research Bulletin* 1999. This abstract by Professor Matti Bergstrom was found in an IKEA Catalogue a few years ago:

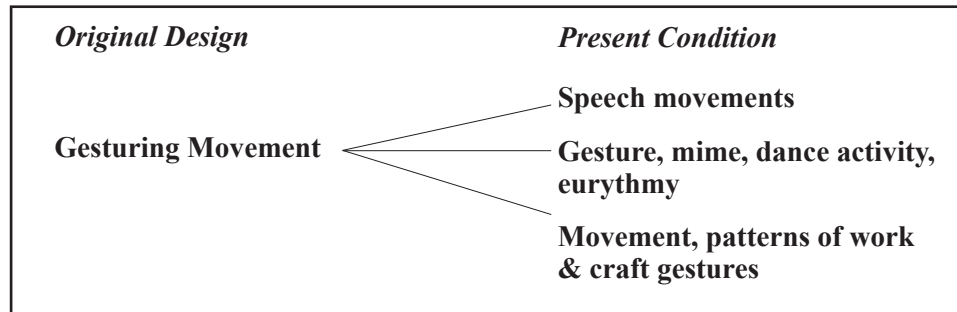
The brain discovers what the fingers explore. The density of nerve endings in our fingertips is enormous. Their discrimination is almost as good as that of our eyes. If we don't use our fingers, if in childhood and youth we become 'finger-blind,' this rich network of nerves is impoverished—which represents a huge loss to the brain and thwarts the individual's all-around development. Such damage may be likened to blindness itself. Perhaps worse. For while a blind person may simply not be able to find this or that object, the finger-blind cannot understand its inner meaning and value. If we neglect to develop and train our children's fingers and the creative form-building capacities of their hand muscles, then we neglect to develop their understanding of the unity of things; we thwart their aesthetic and creative powers.

Those who shaped our age-old traditions always understood this. But today Western civilization, an information-obsessed society that overvalues science and undervalues true worth, has forgotten it all. We are 'value-damaged.' The philosophy of our upbringing is science-centered, and our schools are programmed toward that end. ... These schools have no time for the creative potential of the nimble fingers and hand, and that arrests the all-round development of our children—and of the whole community.

Thinking about doing: origins of movement

Given that anthropologists are offering widely different interpretations about brain development, the origins of language and the early use of tools (for example, see *The Perception of Environment* by Tim Ingold, 2000), it is worth examining our standpoint today on the origins of movement from the vantage point of Rudolf Steiner's research. When speaking on the origins of movement and speech in "Riddles of Humanity" (Sept. 2, 1916), Rudolf Steiner explained that the human being was originally designed not to be a speaking creature,

but rather to express him/herself through movement. What was originally intended changed; gesture became transformed into speech movement and other movements.



(After Dr. Peter Engel, September 1916)

The human being shares the ability to move with animals, but whereas animals learn the movements they require more or less at birth, the human being needs several years' practice to develop all the movements required to enable him/her to walk in an upright position. The newborn infant expresses a multitude of movements, of which he/she is not yet master. Control comes from above to below—eyes to legs and feet. Movement at first takes hold of the child from the outside as it were, and limb movements are only gradually mastered.

The primal reflexes are developed by imitation towards individualized mastery of movement patterns. Attaining uprightness and making those first tentative steps are, however, only the beginning. The expression of movement in the child leads to other faculties in the realm of the soul. Crawling, walking, and all manner of bodily movements lay the foundation for the acquisition of many finer skills. Speech and, ultimately, thinking processes are realized as a result of the internalization of outer movement habits.

Long-term benefits of acquired movement skills

Archetypal work gesture

The movements entered into in precision sequences such as handwork and craft activities are, similarly, more than training in motor skills; in the practice of work movements, which would be better described collectively as 'work gesture,' the will of the pupil and student of the craft is made subject to a greater governing order. It is in the very nature of this process that the character of the gesture works inwards to foster the unfolding and harmonious development of cognition, aesthetic sensibility and practical know-how.

The vehicle for this two-way process is what I call 'work gesture,' and is particularly evident in the movements of a well-practiced craftsman. When acquired, these movements play upon the soul of the human being, giving a beat in the sphere of 'will,' rhythm in the sphere of heart and 'feelings,' and a melody

in the 'thinking' human being. This is the effect of the 'being of movement' and its resonance within the soul of the human being.

Each craft has its own symphony of working gestures, but as important to the acquisition of the actual skills, such as hammering/planing, is the realization of the point of rest and of the complementary gesture. The arm hammers, whereas the body moves away freely; it is free of this movement. This degree of separation cannot be achieved by an animal. The whole body of the woodpecker pecks, it follows the pecking limb, its entire body can but peck. In the human being this is supposed to be different, in that humans have been given the potential for 'free' movement. The point around which any set of working and complementary gestures moves is the center, the space of the human Ego. 'I' hammer, not 'it' hammers. How, then, are 'work gestures' acquired? Is it fundamentally a process of enhanced imitation?

Apprenticeship, for example, whether traditional or modern, entails the schooling of the will. This can still be considered the first step in the process of gaining the work gesture and is chiefly directed to the will. Playing a musical instrument also follows this schooling process. At first the student has to learn the movement until it becomes habit, unconsciously absorbed by the ether body. The sense of 'freedom of movement' comes at the point where the almost archetypally given movement form has in-formed, in its truest sense, his/her own habit. In 'entering an order' the self-discipline is met by the collective wisdom of that life practice.

Rhythm is another key element in all craft movement and musical practice. What is the right rhythm? Is this more than enhanced imitation? Listen to the beating of the blacksmith; there are secondary taps. An established sense of rhythm merges the archetype with the individual interpretation.

Lastly, although our limbs execute the movements, through which will activity acts to transform 'raw' material, the form that emerges comes from somewhere else. The realm of the idea holds that form. Yet the realization of the idea lies in the rhythmic 'time container' fashioned by the limbs and whole body.

In his lecture of 1922, now published as "The Human Heart," Rudolf Steiner describes movement gesture from a very different perspective, one which could almost be called the karma of movement. Our deeds, all our actions, outer movements are inscribed he says in 'traces' into the astral body. As well as these movements, what I have accomplished and my 'intentionality' are also inscribed there. This individually-inscribed astral body streams towards the etheric heart and is received by it shortly after puberty. Our 'cosmic treasure trove,' the 'etheric heart' now receives our own individually-fashioned treasure, a moment of immense significance for all adolescents. All these movement gestures, transformed and held by the etheric heart, are then at death given over to the

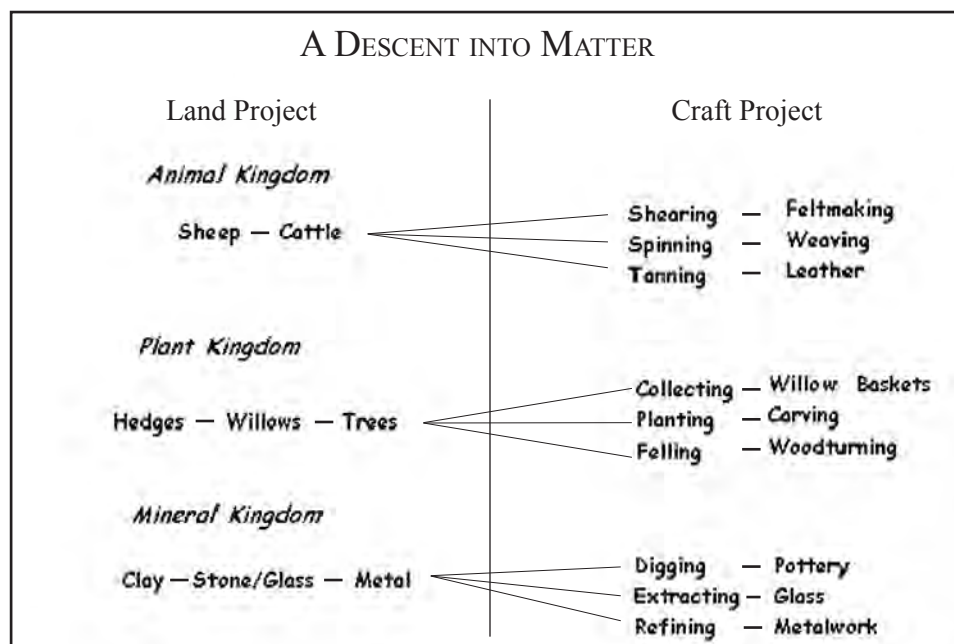
cosmos, sown as seeds for our further karma. Capacities of ‘will’ work into the future; ‘thinking’ stems from the past.

The descent into matter: an introduction to the work

Where, today, can young people find the opportunity to learn work gesture? Encountering the material world occasions many different processes. In our overly sanitized society, children need to be led and introduced to very basic materials and processes. Adolescents need a challenge that helps equip them ultimately with essential skills to manage the practical affairs of life and to develop a moral sense of responsibility for their environment, both natural and human. Using whole body movement and finer motor skill in particular provides a route to ‘grounding’ oneself. Yet what was for the younger child ‘learning through play’ must now become transformed into ‘learning whilst working.’ In an educational context, craft work still has much to offer in developing skill, work gesture and a knowledge of materials.

The following is a suggestion for a Craft Curriculum with an integrated approach to environmental projects. Materials are sourced from the three kingdoms of nature—animal, plant and mineral.

This “Descent into Matter” developed by Aonghus Gordon (founder of Ruskin Mill) also refers to the matching of raw materials to a child’s stage of development as the child itself ‘solidifies’ into its adult form. Thus the soft, tactile experience of the wool in the early years is followed by green, woody materials in the middle school years, culminating in the shaping of more resistant substances such as seasoned wood and metal in the senior years.



Living and learning with nature

The objective in developing an integrated environmental and craft curriculum is ultimately to foster a sense for place and of one's place in the locality. If the curriculum is indeed working,* young people have the opportunity to discover real values along with many practical and social skills, values that have a bearing on the response to others' needs and the sustainable use of materials. Working with the hands in a creative and responsible manner is essentially a human capacity and therefore capable of reflecting humanity in essence.

*Wendy Titman, director of Learning through Landscape, a national organization that works in the mainstream sector, cites schools that have actively transformed their traditional tarmac surfaces into imaginative recreational and educational landscapes and has noticed a marked improvement in both the emotional well-being of the children and in their educational achievements.



Praise for Authority

By Henning Köhler

Translated by Genie Sakaguchi

Amy Chua's book, *Battle Hymn of the Tiger Mother*, is a book of instruction on mishandling the souls of children. Nevertheless it played out as a top media event. Now throughout the nation, people discuss seriously whether it might not be a good idea, after all, to garner a bit of "inspiration" from the conditions of Far Eastern dictatorships.

Bernhard Bueb, author of the bestseller, *Praise of Discipline*, is definitely in favor of this. He is of the opinion that the Chinese are ready to take on Western values. Chua, a daughter of Chinese immigrants, was, to be sure, raised in the United States. Her main argument is that children need to be hardened for the fight for survival in the capitalism of globalization. That sounds at least as American as it does Chinese. And one must admit, such thoughts are not infrequently heard here [in Germany]. Many would say, yes, Chua might exaggerate a bit, but she is not entirely wrong, for our children really do lack respect for authority. Really? Is that the crucial point? Three cheers for authority!

It is a wonderful experience for children when they are able to look up to one or another adult with trust and admiration. In this, Rudolf Steiner was correct. But what did he say, exactly? "Being rightfully, inwardly inclined to venerate," the child would like to turn towards a "natural authority." However, "it may not be an authority that has been commanded. At least, if it must be so for outer social reasons, the child must not know anything about it. The child must feel that through his own feelings he is rightfully inclined to look up to the appropriate authority." A "tender authoritative relationship" could take place. Tender! And what can the adult contribute, that such a "tender" relationship would be possible? "We should be humble. The lack of humility comes from pride. Pride humiliates, even when it is expressed politely," writes the pedagogue Wolfgang Bergmann. Mahatma Gandhi said, "Believe me, if we would humbly bow ourselves down, we could learn the most important lessons in life, not so much from the learned, but from so-called ignorant children."

What if the crucial point were that adults lack respect for the authority that enters their lives with their children, an authority to be approached “with modesty” (Gandhi)*? Steiner knew that no wise person is so clever that he could not learn something from an infant (!). Relating to the school years, he added that the teacher must actually “learn how to teach” from the children. Humility, modesty, and readiness to learn from children—these are attributes of true authority!

Nowadays one hears such things only once in awhile. There lies the main problem today. One might like to call out to Amy Chua and those who think like her, and say: You have not succeeded in opening your hearts. Perhaps some painful experiences lie in the background, but do not make an ideology out of your trouble!

*This is the German sentence: “Wie, wenn der springende Punkt wäre, dass es den Erwachsenen an Respekt mangelte vor der ›Autorität‹ dessen, was mit den Kindern in ihr Leben eintritt als etwas, dem man sich nur »in Bescheidenheit« (Gandhi) nähern kann?”

What Does Term Extension [for Atomic Power Plants] Have to Do with Our Children?

By Henning Köhler

Translated by Genie Sakaguchi

The term extension for atomic power plants gives us one reason to fear that a new boom in nuclear power is imminent. Let me elaborate. Credible calculations show that renewable energy could dominate the market in the foreseeable future. This would result in a decentralization of the electric power supply, severely weakening the atomic lobby—which consists of internationally active big businesses, banks, and compliant politicians. The debate is “a clear either-or situation,” says Rainer Baake, of the Deutschen Umwelthilfe (DUH) [German Environmental Group]. “Those who would extend the term limits for atomic energy plants today place the priority of renewable energy in jeopardy.” Large profits beckon. According to the analysis of the Landesbank Baden-Württemberg, the operating companies can count on an additional profit of up to 70 billion Euros. It is no wonder, then, that there are attempts to put pressure on the Merkel administration, for example through the Energiepolitischen Appell [Energy-political appeal], a nationwide ad campaign launched by Jürgen Grossmann, head of RWE [a large German electric power company], and signed by 40 top managers and bankers.

The Deutsche Bank argues openly for a “renaissance of atomic energy and encourages its clients to participate financially [though their “S-Box Nuklear Power Index Zertifikate,” an investment instrument specifically for nuclear power sources]. That does not sound like it is planned for just a few years of an extended term. High profits on the one side, 500 tons of radioactive waste every year on the other. Where should the stuff go? To LaHague (in France) and Sellafield (in England)? These reprocessing plants (of atomic waste) pump around 10 million liters of contaminated wastewater into the English Channel and the Irish Sea every day. Or should we send it to Hayek in Russia? Future nuclear waste should be sent there from the interim storage facility Ahaus (in North

Rhine Westphalia). Hayek is a dead zone. “This facility has flushed radioactive waste into seas and rivers since 1949,” writes the Russian environmental activist Vladimir Sliviyak. This will continue to happen in the future. Safe permanent disposal sites (for nuclear waste) do not exist anywhere on the earth.

All this is no problem. The main thing is that the money rolls in. After us, the Deluge. Whoever invests in atomic energy can never say, “The future belongs to the children.” The fact of the matter is, we are spoiling—no, poisoning the future for them. The skull on the leaky drums (of radioactive waste) in the former salt mine, Asse II, near Wolfenbüttel, that threatens to collapse, is a symbol.

A study done in 2007 by KiKK, an epidemiological study of cancer in children in the vicinity of nuclear power facilities, has been nearly forgotten. Through this study it could be proven that young children who live near nuclear power plants have a significantly higher risk of getting cancer. Naturally the study was contested with flimsy arguments. The factor of coincidence was considered in only 16 locations. Regardless, Reinhold Thiel, of the German section of International Physicians for the Prevention of Nuclear War (IPPNW), came to this conclusion after thorough examination of the circumstances: “Low-level radiation is the most plausible explanation for the cancers of these children.”

Still no problem. The main thing is that the money rolls in.

Sources and for further reading:

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Translator’s note: In March 2011 (after this article was published in Germany), Chancellor Angela Merkel’s coalition government announced the repeal of the term extensions for nuclear power plants that had been enacted in September 2010. The term extensions had been modified and extended the moratorium on nuclear power plants put into place by the Green Party in 2000, more than a decade ago. The recent announcement restored the original moratorium time limits, the intent of which is to close all nuclear power plants in Germany by the year 2022. “During the moratorium, we will examine how we can accelerate the road to the age of renewable energy,” Merkel said. [Quote taken from article in the *Huffington Post*: <www.huffingtonpost.com/2011/03/14/germany-nuclear-power-extensions-suspended...> 11/27/2011].

Helping Adolescents Improve Their Memory

By Albert Schmelzer

Translated by Genie Sakaguchi

Every day at school we provide children with sights, sounds and experiences that help them develop their memory. We teach them facts, names, rules, categories and problem solving to improve their long-term memory. And we help them store memories deliberately in order to improve their short-term memory. We give them assignments and ask them to filter out distractions from their smartphones and iPads in order to decide what is important.

Some children are powerful in visual reconstruction and easily choose the most important parts of their experiences. They compact this information and then add personal details to their memory. Others are more gifted at audible reconstruction. They listen, pick out important information and find what is meaningful to them. Yet others need to run, knit, jump or use any other form of movement to ignite their memory skills.

Types of memory

Experts break down the memorization process by identifying various categories of memory. Visual memory uses the eyes and the mind's eye. Auditory memory reconstructs words, sentences, stories, and memories of spoken language. Sequential memory registers information in order. Episodic memory registers what happens to you. Procedural memory helps remember for example, how to tie your shoes. Automatic memory moves your muscles instinctually.

An active, working memory is often trained in sports, for example, dribbling, batting, catching passes or diving. Children learn to keep things working together when they need them.

Strategies

Professionals teach children how to build relevant memorization strategies. There are many. For example, group strategy helps children collect images in pairs or in categories, such as funny things. Association strategies help them

recall a name, think of other people in the family or the car, etc. To use the active working strategy, children write down much more on paper or underline parts. The bypass strategy teaches children to find a picture to remember the words. And very effective are the physical exercise strategies in which they, for example, raise one foot up and one arm down. Or move their limbs to the left and to the right to build short-term memory.

Good test preparation strategies include questions that help children know that they know enough. The strategies help them learn what material will be covered, what they need to memorize and how much time they need to memorize.

Where the problems lie

When analyzing where children's problems lie, look into memory deficits in short-term memory and in active working memory as well as how well they register procedures and sequences. Are the children able to recall what they learned last year, last week and yesterday? Are the weaknesses in language processing or data processing? Are the children able to apply rules they are taught or may they have deficiencies in reasoning? And often there is anxiety involved when children have continually made mistakes.

Steiner's approach in the learning process

Not surprisingly Rudolf Steiner approached memory in a very different manner. His goal was to give the children something that reaches beyond the initial ideas, feelings, mental images and skills—far into their adult lives. He challenged teachers to give children ideas, feelings, and skills that are not fully formed but rather capable of growth and development. How is this possible?

As he spoke with the first teachers in 1921, he knew from his own experience that recollecting and perceiving are the same activities but in two different directions; perception is directed outward and recollection is directed inward. "When we perceive something, when in the case of children we direct their soul activity to some outer object and develop with them an idea or concept, the activity will certainly be the children's very own; they are preoccupied, are working with the idea or concept. We call this process perception.

"When the children remember something; the same process is involved, but now it is directed inward. Something is happening within the child. The children are working with something in the same way as in the perception of an outer object. These inner processes that continue when the original mental images of perception are no longer directly present are extremely complicated. It is very difficult to describe, in any specific instance, how a mental image prepares to reconnect with the human being in order to emerge as memory—so that the image may be perceived again. This time it is an inner event. But when we

remember, we really perceive inner events in the same way we perceive outer objects.”

Where does this take place in the children? According to Steiner the continuing effects of mental images and ideas that later emerge in memory actually take place in our feelings. Our life of feelings—with its joys, pains, pleasures, displeasures, tensions and relaxations—is the actual vehicle for the enduring qualities of ideas and mental images that we can recall at a later stage. Our mental images change into feelings, and it is these feelings that we later perceive and that enable us to remember.¹

Most teachers think that whatever concepts they teach will descend into the unconscious spheres of the child’s soul and remain there until they are brought up by memory. Steiner disagrees. He states that the mental images from a lesson change immediately after the lesson is over and the children no longer think about them. The mental images disappear. The question is: How do we help children develop their capacity to recollect?

Memory helpers

One method is to put feelings into our words when we teach. We bring emotions to the topics we teach and allow the children to experience the emotions. Otherwise we merely present what the children see. We can make them feel happy or sad. We can bring warmth into our lessons. This demands more of the teachers. Our goal is to help the children make an inner connection with the subject by stimulating their feelings. If we touch their feelings while they learn, we help their memory when it is directed inward. Another method Steiner suggests is to interrupt the thought process in the midst of subjects such as geometry or physics and ask a child, “If you were to do this and something unexpectedly were to happen....?”—we add feeling to the lesson. We add tension, expectation, and relaxation that will permeate and benefit the thought process.²

A further method is to touch their feelings by addressing the unknown or half-known. He suggested to his first teachers, “If toward the end of a lesson we say, ‘...and tomorrow we shall do this ...’—the children need not know anything about ‘this’; their expectation and curiosity will still be aroused. If, for example, I have taught the properties of the square before those of the triangle and I conclude the lesson saying, ‘Tomorrow we shall learn about the triangle’—the children do not yet know anything about the triangle, but it is exactly this fact that causes a certain tension, an expectation of what is to come, a looking forward to the next day’s lesson. We ought to make use of the unknown or half-known in order to facilitate the children’s efforts at fitting the details into totality.”³

If we use our sense of humor at the right time, it helps our thinking. We evolve tensions and relaxation that act as memory helpers for the children.

A more subtle method is to relate certain aspects of a lesson to other things in life. Steiner gives an example from a physics lesson: “We could, at a given opportunity, spontaneously refer to the weather, to climatic conditions, to phenomena occurring across the globe in a distant country, so that the students realize that there are connections everywhere in the world. They will then experience the feelings that arise when we are led from one phenomenon to another; the tensions and relaxations that result will allow them to identify with the subject, grow together with it, make it their very own possession.”⁴

And he challenges teachers to connect what they are teaching to the human being again and again: “What is there to prevent us, when talking about the phenomenon of warmth, from mentioning fever? What is to prevent us, when talking about elastic balls in physics, from mentioning the phenomenon of vomiting, a process similar to the repulsion in elastic balls and vice versa?”⁵ By relating topics to the human being, we create a totality. The children learn to combine, in their minds, spirit and soul with the physical world. The ideas interact, they flow into each other.

Physical activities and contemplation

Beyond such memory aids Steiner suggests a balance between instruction that brings the children into physical activity and that which appeals to contemplation and judgment. With physical activities children actively develop skills: eurythmy, music, physical education, even writing or the mechanical processes in arithmetic, to name a few. In the lessons based on contemplation, we ask the children to think about the things we tell them. These aspects are fundamentally different. Steiner said, “It is not generally appreciated how much the teacher of a contemplative subject, such as history, owes to a colleague who is more concerned with skills and aptitude. We really owe a great deal, as teachers of contemplative subjects, to the teachers of handwork, music, and eurythmy. We can go so far as to say that the history teacher actually lives off the music or singing teacher and that, vice versa, the singing and music teachers live off the contemplative elements in history, and so forth.”⁶

When we teach contemplative subjects, the children listen, concentrate and use their judgment to understand what is being told. Steiner likens this to a “waking sleeping activity. The separation from the body is not as complete as during sleep, so therefore they do not sleep completely. When they are asleep in their beds, organic activity ascends freely to the brain.” Steiner mentions that the same activity also takes place in the contemplative lessons. “And this rising upward of what is amiss in the organism is continually engendered by our insistence on making the children listen, think and contemplate. When, on the other hand, we teach them eurythmy, when we make them sing or play instruments, when we employ them in physical activities, as in handwork and

gymnastics, even when we make them write something—when they are in fact doing things, the organic processes thus stimulated are an intensification of waking activity.

“Even if the effect is not noticed, singing and eurythmy are hygienic, even therapeutic, activities. This cannot be denied. This hygienic, therapeutic activity will perhaps be the healthier the less we approach it in an amateurish medical way, the more we simply do it out of our healthy imaginative conception of life.”⁷

Teachers need to develop certain concepts to provide these opportunities for their children. They need to discover how living processes proceed in rhythms. This truth applies not only to music but to everything in life. Children need to move between activities and be led back to themselves. This provides tension and relaxation. Only rhythm maintains life. Therefore if we handle the contemplative subjects correctly, the children produce faculties that will appear in the other subjects. If we give the children imaginative pictures of, say, a Julius Caesar in history lessons, they develop their own imaginative pictures; he comes alive to a certain extent. They “see” him walk, fight or whatever. In this moment the children model images in their mind, not only learning about the persons successes and failures. “And if they then proceeded to a handwork lesson, you may be absolutely sure that they would knit better than they would have without Caesar.”⁸

Steiner told his teachers they can be pioneers in education if they make use of the abstractions, the lifeless concepts of their day, and combine them with such living imaginative pictures. They can teach history in such a way that it enlivens anatomy, and anatomy in order to bring life to history. “The function of the liver could, for example, give you an idea for treating the history of the later Egyptian culture, because the nuance, this special nuance in the presentation, the aroma one has to spread across the later stages of the Egyptian history, one acquires during the contemplation on the function of the liver in the human organism. By interweaving subjects in this way, you will meet an educational need by bringing together the so-called physical, which does not as such exist, and the abstract spiritual, which has no meaning as such. Thus you may enter the classroom in such a way that your words carry weight and, at the same time, acquire wings. You will not torture the children with words that merely fly away, nor will you teach them skills and aptitudes that weigh them down.”⁹

Imagination and memory

Some children have vivid imagination and others have little imagination. Teachers can learn to deal with these children appropriately. We need to engage these groups of children in the most diverse ways by developing routine. Those with little imagination have difficulty getting the pictures to surface. Steiner suggests, “They should be made to observe better during reading. We should

try to get them to listen better. With children who are slaves to their mental pictures, we should see to it that they become more physically active, mobile; we should make them concentrate more on writing. We should have two groups in the class—giving the children who are poor in imagination the opportunity for cultivating their reading and observation, while for the other group, the children with a vivid imagination, we could especially cultivate painting and writing. Naturally it is a matter of degree because everything is relative.”¹⁰

The school organism

Working with children is the core activity of any school. It is therefore the true basis for all organization at the school. If we notice children struggling in our physics lessons, we can speak with the music teacher and ask him to find ways to help the child. The lessons with physical, artistic or craftsmanship activities appeal differently to the children than the lessons that are contemplative. The school organism comes alive in the moment teachers work together to understand the challenges a child is facing and then provide hygienic opportunities in the various activities. In this way our subjects become integrated. The needs of the children are met.

We also contribute to the school organism when we gradually acquire the necessary educational skills by studying the nature of children and by appealing to their imagination. Steiner declares that “children long for this attention. They need it. And the teacher will greatly benefit from a preoccupation with this aspect of education. A lively interest in human nature is, of course, the condition for succeeding in this endeavor. Such interest can be developed and anthroposophy will provide you with the hints you need. Avoid getting stuck in your own abstractions when you develop your own concepts. You should instead endeavor to understand the human being in regard to its human nature.”¹¹

The opportunities are endless. A good teacher learns how to mix it up.

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Endnotes

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1. Lecture One, June 12, 1921, page 18
2. Ibid., page 19
3. Ibid., page 20
4. Ibid., page 24
5. Ibid., page 24
6. Ibid., page 20
7. Ibid., page 21
8. Ibid., page 28
9. Ibid., page 30
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11. Lecture One, page 29



When a Child Has Problems, It's Not Always the Parents' Fault

by Henning Köhler

Translated by Genie Sakaguchi

The child prefers to imitate that which she can deeply inwardly affirm and ignores what she doesn't like.

“Case discussions” are a type of pedagogical conference which can remind one sometimes of police briefings in those criminal cases at the stage where one has fixed upon a perpetrator, who, owing to lack of evidence, cannot yet be arrested. Under strong suspicion: the parents. Who else? In the old criminal novels, the murderer was always the butler. When a child gets out of line, the parents are always to blame.

I remember the “case” of Selma, eight years old. The problem: extreme shyness. The causes were discussed and, in addition, what remedies might be provided. After the problematical behavior was described a bit more closely, the rounds turned quickly towards analysis of the perpetrator: overly concerned mother, uncommunicative father, tensions in the marriage, and so on.

At some point I brought up the idea that one would really do a child an injustice to regard her as merely the product of her parents. In addition, these people, whom I had had an opportunity to meet beforehand, seemed to me to be quite reasonable. This caused surprise at first. One participant said, “From nothing comes nothing. In the first seven years of life children are most significantly imprinted [*geprägt*] by their parents.” Wait a minute. Is that right?

We know of the central importance of imitation in the first seven years. Imitation, however, does not mean being imprinted. The child's urge to imitate is by no means hindered by the child's urge to self-creation. On the contrary, the impulse towards imitation serves the impulse towards self-creation. Healthy imitation has initiative and is discriminating. The child much prefers to imitate that which she can deeply inwardly affirm and ignores what she doesn't like. Through “imprinting” or coercive and suggestive influences, the being of imitation—the first form to appear of the free human being—is repressed.

I experienced Selma's parents as appropriately permissive in their basic attitude and their style of child-rearing. Obviously Selma had taken on the best of both: from her father, a calm, collected seriousness; from her mother, a kind, careful manner of dealing with people and things.

We finally agreed not to speculate further about the parents, but rather to turn our attention to Selma. I could report from the case history that from her birth, Selma was a quiet, somewhat inward child, easily frightened, but also very creative. Among her most distinctive characteristics were a wonderfully dry sense of humor and her musical talent—characteristics that both the mother and the father were lacking.

To no longer view her as if she were simply a formation of "imprints" brought us closer to Selma. In the end we discussed possible ways to work with the parents, who were, after all, quite trustworthy, to find careful assistance for Selma. For, in fact, she was very shy.

Education Through Experience – Experienced Education

by Dietrich Esterl

Translated by Genie Sakaguchi

For centuries it has been asserted that we do not learn for school, but rather for life. In reality, school has been, for the majority of children, just drill and cramming, arousing anxiety and boredom. Educational reform of the past century attempted to open school up to life, in order to make way for deeper discoveries, more exciting experiences and more interesting learning. Where do schools stand today, and can their everyday routine be penetrated with experiences?

Earlier and earlier, more and more expanded

For the past twenty years or so, the trend has developed to break up the daily routine of the school schedule with special activities, and these take place earlier and earlier as well as more and more extensively. At one time, an excursion into the nearby environs was seen as the high point of the whole school year. A week-long class trip to a school camp at the end of eighth grade or twelfth grade was the highlight of one's entire school experience. Today there are special programs from the fourth grade up, and the upper grades have practical field trips to farms, businesses, social institutes, and relief actions taking place over several weeks, and all over the world.

This has consequences for the main lesson blocks in the high school grades. To be able to have a four-week block, which is meaningful for pedagogical reasons, becomes an infrequent stroke of luck, while the shorter blocks increase in number and grow even shorter, interrupted by all kinds of festivals and finally, by the free Saturdays, which in their own way broaden the experiences of children and young people.

The impressions from the special activities fade quickly. They awaken boredom when they happen too often and become the "norm." And then what happens in the rest of the everyday schedule? What about a normal history main lesson? What happens in an English class?

What is the meaning of “experience”?

Let us look into the meaning of “education through experience” [*Erlebnispädagogik*], a concept that is used for various pedagogical “projects” from simple object lessons to circumnavigation of the globe. To begin with: What creates experiences out of life? [In German, this is a play between *leben* and *erleben*.] From the etymology, “experience” [*Erlebnis*] is active living, a life directed outward. Or one might say, through experience a human being makes something out of his life. But today “experience” has more the character of something that happens to a person, working inwardly from the outside.

Life in modern society is being shaped by extremes to a greater and greater degree. Rapid results and intensity of “sensations” have increased enormously. For those who can remember the complaints of teachers from the end of the 1950s, speaking about sensory overload through advertising, magazines, radio, and the noise of boogie-woogie and rock’n’roll, these seem almost harmless in comparison to the kinds of experiences that are offered and sought out today.

One can observe something similar in the possibilities for individual expression. Adventures in self-awareness border on the achievable, the bearable, and the edges of violence, and become mass movements, for example, a hundred thousand people running a marathon.

The causes for such phenomena lie, to begin with, in the lack of true experiences, even the deprivation of experiences, in a “normal” life. To be sure, what are the conditions for being able to experience something? Here we are in the domain of pedagogy, the education of capacities.

A few conditions for having experiences

Here it has to do with how the relationship between the human being and the world is shaped. This relationship does not play out in a particular “condition,” but rather in a rhythmical swing from the inside outwards and from outside inwards. We live in the alternation between taking in and giving out, between breathing in and breathing out, between going to sleep and waking up, between surrender and control. These are all the bodily, soul, and spiritual foundations of our experiences. Here are a few principles that can be established in this connection:

- The movement between the human being and the world must be learned, taught from the beginning of one’s biography.
- These are phenomena of balance or equilibrium; every instance of one-sidedness in one’s life leads to disturbances and sicknesses.
- The human needs and seeks greater and lesser movements in these pendulum swings.

We can look at four different aspects of the educational process that foster [a life of experience], which all work together, but take place one after the other in the course of a lifetime.

1. For children and young people who are still growing, there is a subjective side of experience, namely the capacity to perceive the outer world, to engage with something and stay with it. Through repetition and practice, this builds the capacity to “digest” something.

2. The objective side has to do with the type of world-content. Just as, for example, different foods can make one healthy or sick, so also can one say that soul and spiritual impressions can have positive or negative effects, shaping the capacities for experiences.

3. The human beings in [a child’s] surroundings, the parents, caregivers, and teachers, all have an important role in this shaping process. Through their being and their actions, they affect and shape the way a child’s capacity to experience develops.

4. The subjective side of this interplay is the methodical consciousness and actions of the adults, through which the form and content of the experiences are shaped, for themselves as well as for the children.

These four aspects have been brought into question in today’s educational thinking. [It is said that] instruction should “make one fit” for specific professional or vocational tasks. Eligibility for higher education and the corresponding social status become the motivation for learning. The content is based, above all, on what can be “used.” The role of the adult “facilitator” moves more and more into the background, as the “expert” and organizer.

The problems with this situation are mirrored in the discussions about the results of the PISA exams [the Programme for International Student Assessment], and about standardizing and modularizing education from kindergarten through high school. Gradually more and more resistance is arising, as from a grassroots movement of students, teachers, and parents, against this system. Just like a hundred years ago, there is a loud demand for a paradigm shift to one in which schools should meet the needs of the children, be more appropriate for young people, be more human, and more socially organized.

For a long time educational reforms have cultivated experiential education.

Waldorf schools and other schools of the educational reform movement have introduced many different kinds of educational experiences. The broadening of intellectual schooling through handwork, artistic activities, and community-building activities has been an essential characteristic of these reforms. These elements in particular have proven to be fruitful for the development of young human beings, as they address them in all their expressions of life and possibilities of experience.

In reformed schools, and also in Waldorf schools, the deeply ingrained object lessons of the “Lernschule” movement* determine the pedagogical practices. Because of this, and in spite of other intentions and goals, a certain kind of artificiality often arises in the course of normal instruction. This in turn awakens in the students and the teachers a need for “real” experiences. But cannot the everyday schoolwork become an experience?

How can everyday school become experience?

The central question has to do with how the relationship between the adult and the child is shaped and lives. This has to do with presence, presence of spirit. Young people have a very fine sensitivity for feeling whether their “presence” is merely outwardly ordered and directed or whether they are really perceived, whether a meeting between human beings is taking place, and not just between role-players.

In many classroom visits I have observed that all mastery of, or expertise in, a subject and methods sets up distance and lack of connection in the atmosphere of the classroom. Instead, relative chaos and improvisation can bring about lively, involved participation in the class.

These are very simple things that play a part here. For example, I have always completely avoided greeting the students as a group, or with a number, until I have first greeted each individual student. In the course of the class period, each individual should be directly addressed, and not just for disciplinary reasons—perhaps, in the case of discipline, not at all! [There should be] no hour without laughter, without moments of being affected, without total silence, without relaxed comments. The interplay between expression and inwardness, between concentration and letting loose, between devotion and distance, all make “experience” possible even in the most everyday course of instruction. These kinds of things that the teacher brings to the lesson make education into a real art, moreso than the content of the subject.

An ideal method for asking questions

The following is a personal experience from a lesson. It was in a German and History main lesson with Herbert Hahn, having to do with the art of asking questions about the relevant events or reading material. After a time of silent thought, he would ask a particular student for an answer [to his question]. Then, often after a patient wait on the part of the teacher and the class, would come a more or less stammering attempt at an answer. The answer always evoked a

**Lernschule* [Study School] seems to stand in contrast to vocational schools, or old-fashioned liberal arts schools. It was one option for education in discussions of the early twentieth century. –tr.

joyful affirmation from Hahn. Then he would take the formulated answer and “add” to it, so as he repeated what was said as a relevant statement, he clarified the question and often set it in a broader context. We students were struck with amazement over what was summarized as our answer. That [this clarification] was tucked into our green stammerings, and could be spoken [with meaning] like that! Trust was awakened for our own relationship to the subject. In this way, actors, philosophers, and self-confident partners in conversation were born. How very different was the effect of this [method] from that of pointing out the shortcomings of the answer and providing correction.

The enthusiasm of the teacher

A further, strongly effective catalyst for experience in the classroom is the connection the teacher has with the subject matter. Students have an exact feeling about whether the teacher is just acting as a facilitator or whether he is really involved in the subject. Joy, enthusiasm, and an open, questioning attitude on the part of the teacher are all much more important for the intensity of the students’ experience than the content of the lesson. When one can successfully link the material with current world events and also with the inner questions of the young people, then it is really “experiential teaching.” Areas of interest, sometimes even including the choice of a major in school or a profession, are often inspired by such learning experiences.

The significance of art and handwork

In the artistic and handwork classes, the qualities of experience are much more concretely and intensively cultivated than in the “onlooker” subjects. The will and feeling life connect directly with the “matter,” with wood, stone, color, movement, and so on. The activity practiced over many weeks during a block of stone cutting, for example, trains the capacities through attention, care, feeling for form and for material, perseverance, concentration, and distancing oneself from the work. Through repetition and through the required endurance, the connection of the young person to the world is intensified. Out of “heart and hand,” sense perception, alertness, and judgment are built.

On twelfth grade class trips I could observe over and over again that young people who had not exercised these capacities did not have an eye for the landscape, for works of art, or for local points of interest. Thus it appears that the person who cannot bring experiences to everyday activities cannot perceive what is special.

On the other hand, one of my most astonishing experiences was to see what ten days of stone cutting in Azzano near Carrara could bring about in the students. What they were able to experience afterwards on an excursion to Florence—in perceiving the statues of Michelangelo, in observing the buildings,

what they expressed and what was discussed—proved in the highest degree that the essence of human experience is presence of mind [presence of spirit, *Geistesgegenwart*].

The world today hinders experience.

Young people have to come to terms with two conditions of our world today. On the one hand, everything that surrounds them is finished, perfect, and arranged, can be used, operated, or thrown away. But they cannot really “start” anything with these things; they cannot engage themselves with them. On the other hand, they are overwhelmed with impressions that can scarcely be taken in, let alone grasped or digested.

In this area the school takes on a growing task: to shape a situation in which a human being can make a connection to the real world. This can happen in every math lesson as well as while playing music or on an excursion. But even here the basic principle of life holds sway: to find the right measure and the healthy rhythm in little things as in large things.

About the author: Dietrich Esterl was born in 1934 and studied philology, German, history, political science, and philosophy. From 1963 to 1999 he taught German, history, Latin, and art history in the Free Waldorf School in Uhlandshöhe, Stuttgart.

“Panacea”: The Magic Remedy for a Contemporary Education

By Johannes Kiersch

Translated by Genie Sakaguchi

The practice of Waldorf education rests upon Rudolf Steiner’s anthroposophy and thus it has an esoteric core. This fact can awaken questions and doubts. In our series, Johannes Kiersch deals with necessary boundaries and shows how enlightened rationality, a contemporary pedagogy, and the esoteric exercises of anthroposophy go together.

In our scientific-technical world, the training for almost all careers is built upon the model of an engineer’s course of study. Just as a qualified technician studies the laws of physics and then applies them in practical work, so the candidate for teaching studies the science of his specialty and the corresponding pedagogy founded on educational science, and then works with these in the school. Seen in a general way, this applies also to the Waldorf schools. In Waldorf schools, the teachers need solid knowledge in both their subject(s) and in pedagogy. But that is not all.

From the very beginning, in the foundation courses of the Fall of 1919, Steiner gave the teachers-to-be of the new school, in place of clearly defined scientific teaching content, something quite unfinished: a content inspired by one’s own observations, by open connections to “living concepts,” a web of meditative motifs, and knowledge in esoteric form. If someone expects Steiner’s *Study of Man* [also in English as *The Foundations of Human Experience*] to be a simple introduction to Waldorf pedagogy, they will be disappointed. Steiner expresses himself in thought forms like those that are also found in Goethe’s natural-scientific writings. The Germanist Uwe Pörksen has made a study of this unusual mode of expression. He found phenomenological series, polarities, and semantic “fields.” These characteristics appeal more to an artist than to the prevailing analytical thinking of a scientific researcher of the present. Similarly, in Steiner’s work, what is presented is designed so that the listener or reader

should work on it further, to make it his own, concretely and deeply, each in his own way.

One year later Steiner expressed himself more clearly in the first continuing course on education. He wanted to inspire a “meditatively acquired understanding of the human being.” [*Meditatively Acquired Knowledge of Man*, CW 302a or b].¹ He hoped this would promote a creative art of teaching and instructing, arising from direct experiences with children. “A knowledge of the human being that weaves in life will perceive the being of the child the way the eye perceives color.” (GA 36)²

The conceptual pictures of anthroposophical knowledge of the human being should, in practice, become as transparent as the vitreous humor of the eye is in the process of seeing. Every theoretical element disappears in the direct, concrete contact with the children—and yet every child, even as he is better understood from day to day in his own unique character, still remains a “holy riddle,” as Steiner often said. But that is just what leads to pedagogical productivity.

Here is one example of the many suggested meditative pictures that appear in Steiner’s esoteric pedagogical courses. Steiner called it the “Panacea,” the magic remedy [in the soul of the educator and teacher] for contemporary education. He referred to three basic moods, which, in their harmonious working together, can create a productive pedagogical atmosphere, and he accompanied his words with expressive gestures, by which he indicated that they could be reproduced as sculptural forms.³ Two things are striking about this: His manner of speaking is aesthetic, addressing not only the head, but also the heart—the soul life of the teacher who would take this up. And the corresponding anthroposophical concepts are incomplete, open on all sides, and designed for ongoing development.

*First motif: “Reverence for what precedes the child’s existence [before birth]”*⁴

Does this refer to the conditions in a child’s life under which he treads his life’s path, the fortunate circumstances as well as the familiar burdens, sicknesses, and blows of fate that the child has encountered? Or something from the hidden sphere of pre-earthly experiences? From preceding incarnations? No Waldorf teacher is required to believe in reincarnation, but neither need he reject such ideas as “unscientific.” That every child brings his own unique destiny into the school is, in any case, a pedagogically helpful imagination. One becomes somewhat more careful and cautious in one’s judgments.

Second motif: “Enthusiastic anticipation of what follows the child [after death]”

Steiner’s view of the future is similar. This is not really speaking about later trials in life, or a professional career, or even future destiny. But it can engender

an encouraging mood of confidence, an attitude of expectation, that gives the child security and helps him forward.

Third motif: "Protective gesture for what the child experiences during life"

This is pointing to the vulnerability, the intimacy of soul that belongs to all truly productive pedagogical processes, which can all too easily be injured by popular notions of educational success according to lesson plans and test scores. A protective mood creates a quiet space of encouragement for anxious children, gives consolation in sorrow, and can even absorb some of the excesses of a "temper tantrum." Serenity may appear, peace and quiet in the work with the children.

The esoteric "panacea" motifs present a pioneering corrective to the empty operation and feasibility fantasies of so many modern schools. These motifs are not, or not yet, scientifically grounded in detail, but they are very plausible and practicably fruitful. One day an educational anthroposophy will have a great deal to say about this.

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Translator's notes:

1. These lectures were also included in the English publication, *Balance in Teaching*. The lectures were given in September 1920, in Stuttgart.
2. This number might be different now. The notes from the author name GA36 as Rudolf Steiner: *Pädagogik und Kunst*, but CW36 is not that title.
3. Rudolf Steiner accompanied each of these phrases with a gesture. The following description is attributed to Caroline von Heydebrand: the gesture for 'reverence' – hands folded in prayer (in the stenographic record: two hands inclining upward with the finger tips toward each other); the gesture for 'enthusiasm' – hand outstretched, pointing; the protective feeling – the right arm [encircling] as in the eurythmy gesture for 'B.' http://steinerbooks.org/research/archive/balance_in_teaching/balance_in_teaching.pdf, 2/20/12.

4. Current English translations of this well-known quotation from Steiner add the phrases “before birth,” “after death,” and “during life,” which are inferred in the German, but not explicitly stated.

About the author: Johannes Kiersch was a teacher of German, history and English at the Rudolf Steiner School of Bochum-Langendreer and involved in building the Institute for Waldorf Pedagogy in Witten/Ruhr. He was a member of the board of the Association of Free Waldorf Schools (in Germany) and on the advisory board of the Pedagogical Research Center.



