Awakening intelligence

MAGDA LISSAU

Awakening Intelligence

The Task of the Teacher
and
The Key Picture of the Learning Process

by

Magda Lissau

Dedicated to Waldorf Parents, Teachers,
Students and Waldorf Alumni Worldwide

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Dedication

Much gratitude is due to dear friends and colleagues who encouraged me in this present endeavor. Many of these ideas were often discussed with my Chicago colleagues at Arcturus, Frances Vig, Rose Edwards and Alexander Cameron in particular. I want to thank Rose especially for her essential critique of these pages.

David Mitchell has again shown himself to be both instrumental and supportive in editing and publishing these pages. He has a deep understanding of my intentions and supports my attempt with an incisive and delicate editor's scalpel.

Last but not least, I appreciate the many teachers and students who have listened and applied these ideas and have found them useful to some degree.

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Introduction

With this book I hope to introduce the reader to four potent clusters of ideas as they impinge on education, particularly Waldorf education. It should be understood clearly that the philosophical basis for these pages lies in the worldview of Rudolf Steiner (1861–1925), who founded Waldorf education in 1919. Steiner's worldview was then and is now being applied successfully in education, agriculture, all artistic disciplines, science research, medicine, and other fields of life. The achievements of their practical applications vouch for his worldview, which is not easily accessible to the so-called modern mind without focused determination. However, those individuals who have embraced this worldview and have built up their working lives on it have found not only that it *works*, but also that a *great measure of fulfillment*, and thus a firm basis for life, is found in it. At the time of Steiner's life there were many objections to his worldview, particularly from the side of traditional science, as well as from the side of religion. These objections may no longer deter us from the needs of the present situation. The fact that work arising from his worldview is achieving impressive results speaks for itself.

One of these groupings of ideas has to do with *intelligence*. A key question is whether we give more weight to the information, or data, as the property of learning, or we give more weight to *skills*, to *capacities*. It may be a simple observation, but in order to face the challenges of life we are in need of both: information, or knowledge, as well as capacities. Real knowledge of course implies the capacity of linking together data, a variety of items of information, so that comprehensive knowledge arises. The other aspect of this combination of knowledge

and capacities is that it is vital to know *where* one might find the information one needs. Intelligence as presented here points to human capacities beyond the constraints of physical body, the brain and the nervous system. In particular the growth of logical reasoning in grade school students becomes apparent in seven stages that in Waldorf education are supported by the curriculum. The origins of intelligence per se are also described following Steiner's insights into human life. Philosophical and educational implications of this view are explored here.

A further vital idea concerns the *learning process* in children in relation to the developing human psyche. As human beings we are capable of learning throughout the course of our lives, in contradistinction to animals. While learning may be more difficult for older adults, human beings have nevertheless retained the capacity for change entailing a faculty for mental flexibility that is a priceless gift to humanity. We are able to wonder at the marvels we see for the first time; we are able to experience thrills many times over even if we place ourselves into the same situation that we have already experienced many times; we are able to go forth in search of new experiences, new ventures when we feel the need for a change. The reason we are able to do this is because human beings have been gifted with imagination.

Imagination is a central asset of our inner life of soul—our very personal experience of the world around us, of other human beings, as well as of ourselves. In fact it is nearly impossible for human beings to learn anything new without employing this power of imagination, which allows us to project ourselves into the future. In certain circumstances this gift, so uniquely human, is hidden and has to be freed before it can carry out its task of enabling learning to take place. We shall touch on these circumstances in the course of these pages. In other conditions, those individuals who are education specialists and who know all facets of a human being's essence—in body, mind and essential self—are able to strengthen these facets so that they may

serve the necessary learning activity. The *transformation of adult ideas into suitable imaginative forms* to be presented to the minds of children and adolescents demands the transformation of such ideas also in the minds of teachers. A powerful ally in this process of transformation from abstraction to imagination is the deliberate *working with time*.

This book does not intend to add to the list of books on Waldorf education that present details of the curriculum, although by necessity examples will be given. It also does not intend to present a *how-to* approach that invites imitation of lesson plans. It does, however, hope to convey to aspiring teachers and all those who seriously wish to understand the essence of Waldorf education, the focused mental and spiritual dedication a teacher needs to draw on in order to implement her or his intention to enable young minds, hearts and bodies to fulfill *their* mission in the service of humanity.

Chapter 1

Windows into Waldorf Classrooms

I have had many years of teaching the grades in several Waldorf schools in Europe, Africa and the United States, where I taught all subjects which are used as examples. At this point in time many books are available on the Waldorf curriculum, written by experienced Waldorf teachers.[1] These serve to stimulate an aspiring teacher. In a Waldorf grade school it is not the specialist teacher that teaches subjects such as those described below in the grades, but the main teacher for the class. Specialist teachers will deal with these subjects in the high school. The reason for this situation is that a teacher who knows her or his class of individuals is able to convey the essence of these main subjects as preparation for life, not only as preparation for university studies. The aim is that all students should have a good general foundation of knowledge and a feeling for the different areas of life as explored in as general and phenomenological a way as presented by their class teacher.

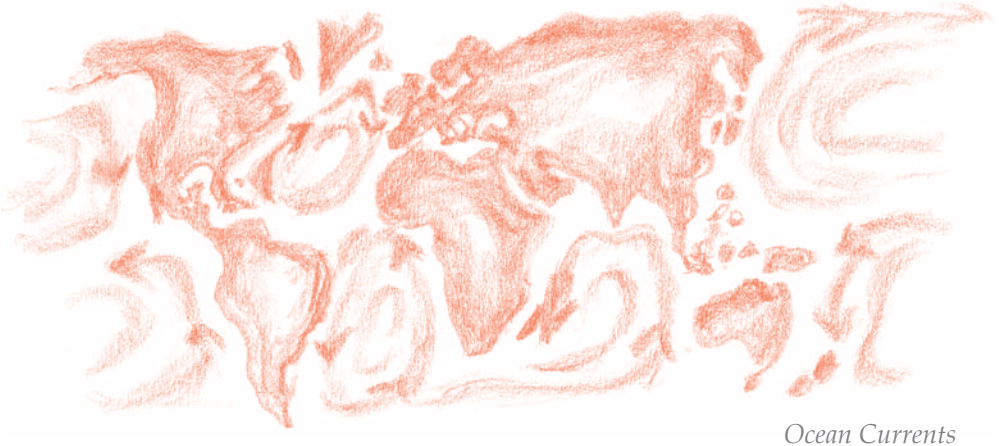
Earth Science in Grade 8

We enter the classroom for the earth science subject block[2] in, say, the second week of this subject. After a dedication to the day's work and to humanity, the teacher leads the class in a recitation of *The Rime of the Ancient Mariner* by Samuel Taylor Coleridge. Individual students recite some verses; others are performed by a few or by all students.[3] Emotions are stirred as students relive the horrendous dangers of seafaring in bygone days, and the dangers of the waters, the polar oceans and the superstitions of the sailors. Evocative words paint strong pictures as they are spoken poetically and stir the students' imagination.

Then the teacher asks for a brief review of yesterday's material, in this instance the surface currents of the earth's oceans. As experienced in the poem, in the days of sailing ships mariners were at the mercy of the ocean currents. A lively conversation—stimulated by the teacher's provocative questions—about the reviews and about the ocean currents takes place. The difference of sailing several centuries ago and the present state of shipping is discussed. The importance to shipping of earlier ages, and to the fishing industry, is indicated. Several students make oral reports on research they have prepared.

Then a common activity is begun: The students are led into the gym or other available large space. There, by assignment, two groups are formed. One group represents the earth's continents, another the ocean currents. After taking their positions as on an invisible and imagined world map, students in turn move to the flow of the ocean currents, while the ones representing the continents stand still. For several minutes a coordinated and rhythmic movement takes place as students walk along the trails of the currents. The amazing facts of the northward circulation of ocean currents on the eastern side of the continents in the Northern Hemisphere, and the respective and reciprocal southward motion on the western side, becomes apparent as students move. The equatorial currents move from east to west, in opposition to the polar currents. Why? At this point students realize that one cannot make sense of these phenomena unless all earth facts are taken into consideration, in this case the rotation of the earth.

After *dancing* the choreography of the earth's waters for a while, some fifteen or twenty minutes, the students return to their desks and now proceed to work on making their own text books. Text is written by them or dictated by the teacher if specific information must be precisely verbalized. The students execute drawings, illustrations and graphs as needed. Everything is compiled into a carefully and artistically designed book. This will be the record of work for this block of studies. Much of this work may be done as homework.



Ocean Currents

Obviously, each student has assignments for individual research, on which she or he reports to the class. And the topic of the oceans, with which we began this description, is rounded out, on prior and subsequent days, to an overview of other areas of earth science, namely the mineral solid sphere of the earth, mountain ranges and possibly plate tectonics, details about the atmosphere and its layers, and particularly how the oceans, the hydrological cycle and the prevailing winds, plus specific local conditions, create weather in a general overview of meteorology, including different cloud formations, and finally a picture of the volcanoes of the earth. In short, all elements are active on the body of our planet: water, fire, air, and the earth or mineral realm. In each of the sections of earth science poetic/artistic work precedes discussion, movement choreography illustrates details, and bookwork concludes these efforts by distilling everything into a conceptual whole.

The result: A comprehensive picture of the earth, which will allow itself to be developed in greater detail in high school. More importantly, this picture arises out of individual experience fired by imagination. The emotional, the volitional and the conceptual regions of experience are addressed.

The emotional is called upon first by the recitation of the poem and further stimulated by following the motions imitating the ocean currents, in a feeling-artistic movement mode. It is accentuated when students realize that everything on the earth is interdependent even while creating individual phenomena. In this way a feeling for the whole of the earth is generated.

The volitional is called upon to execute the motions of the ocean currents as true to reality as possible, obviously on a different scale. Further, the effort to synchronize motions with other students demands control over one's actions and therefore exertion of one's conscious volitional capacities.

By applying conceptual capacities, eighth grade students should demonstrate fully developed logical reasoning, the different phenomena are integrated into a general understanding of the whole subject, and this general understanding may then be rendered in oral and written work. Intelligence is awakened on all three levels in the above-described process of a lesson. Intelligence in the area of emotion and feeling develops the sensitivity for the phenomena; intelligence in the area of body motions helps bring about perseverance for one's tasks; intelligence of concepts enables the individual student to experience the integrity of the wholeness of the earth.

What needs to be a teacher's preparation for such a block of earth science?

The teacher needs to determine the sequence of the block periods for the *whole year*. Some subjects are better suited for the beginning, others for the end of a school year. Obviously, too, she or he needs to read some basic books on the subject *several months* in advance, preferably books that give real information on specifics, instead of abstract theory.

The teacher is required to penetrate thoroughly the details of physical phenomena which science provides in great abundance and to then summarize these in order to picture the essential facts of the wholeness of the earth. This is not simple today because, for one,

teachers are not used to working out their own material, they are used to simply presenting what is contained in textbooks. Also, the material in today's scientific publications is often full of theories and either too full of details or lacking the vivid descriptions of the phenomena. And, too, the respective teacher may not be used to the mental toil needed to form general concepts based on detailed data. Nevertheless, it is this comprehensive conceptual preparation of the teacher's entering into the subject matter which is essential for her or his ability to convey it to the students in a living and experiential way. The teacher her- or himself needs to develop the courage to absorb the material into her or his very soul, live with it, and only then will be able to creatively apply it in the classroom so that the students will have the appropriate learning experience. Before a teacher can teach imaginatively, he or she needs to develop imagination for her- or himself.

It is up to the teacher to realize that a comprehensive look at the earth planet from the viewpoint of the phenomena is to realize that the surface layer is either solid rock or moving waters, that the atmosphere above is layered also, that intimate interaction of water, air and heat creates weather conditions, and that the earth's inner core may manifest on the surface as volcanic fire. It is not insignificant that in earlier centuries the four elements of fire, air, water and earth were shown.[4] While today's science does not recognize these four other than in the aggregate states of matter (and fire does not even rate a separate existence), this view nevertheless enables the striving teacher give a comprehensive picture of the earth which is suitable for this age group.

The teacher needs to develop a feeling-understanding and imagination for the earth phenomena before being able to pass this on to her or his students. It is important to carry for several months the essence of the subject matter in one's mind, so that one's own spirit and soul may work on it both consciously and in one's subconscious.[5]

Three or four weeks in advance would be a good time to map out the actual lesson plan in general: sequence of subjects, which poems,

which music (if any), which actual movement activities are suitable for depicting which processes, which research and essay subjects.

Three days in advance to begin a new subject is a good time for the teacher to form again an inner picture of the essence of this subject matter, so that she or he involve her/his own soul experience with the subject.

Finally, on a daily basis, one needs to be clear on the sequence of the emotional-feeling impact, the volitional activity, and the conceptual conclusion, because it is best to state the facts on the first day, relive them feelingly on the second day, and finally bring them to conceptual formulation on the third day.[6]

Another vital aspect of daily work is that at night, before going to sleep, a teacher needs to review the day[7] and also picture her or his students. Further, if a difficult movement activity is planned for the next day, then an imaginative envisioned preview of the students carrying out this movement activity is helpful. In my experience, this has facilitated the learning activity on the next day. In Steiner's view our *sleep experiences* are essential in our relationship with other human beings, in this case with our students. More about these sleep experiences will be discussed later.

Grammar in Grade 5

The curriculum indications for this grade's story material are ancient Eastern mythologies and later in the year the transition from mythology to ancient history, which becomes a separate subject. However the practice work is built around the backdrop of mythological and historical tales. The language arts indications for grammar are sentence analysis, parts of speech, and sentence structure according to subject, predicate and object, active and passive voice of verbs, direct and indirect speech.

We enter the classroom. Students are reciting verses from Homer's *Iliad*. Great importance is placed on the hexameter rhythm, which allows words to be carried on a long stream of breath and widens the students

feeling of space. This is mostly spoken in chorus style, but individual students are asked to speak certain lines on their own, to help the teacher ascertain their capacity of breath control and expression. Not only do students become familiar with one of the world's greatest epics, but a feeling for a distant age is invoked, a feeling for a world much different from the present.

The teacher asks for a review of yesterday's work. The story might have been *The Odyssey*. But the teacher also asks for what has been learned in language arts, not only a repetition of the story. Students recall their sentence analysis and refer to the parts of speech. In earlier years—third and fourth grades—simple hand and body motions indicated different parts of speech, which usually were distinguished in written work with color-coding and different writing styles. The fifth grade teacher might remind the class of past years' work and introduce a different model to portray sentence analysis now: Each sentence is a unit just like a human being and is whole in body. (We should resist discussing with the students at this point what it means for a human being if an arm or a leg is missing.)

The teacher indicates on the floor, without drawing it, relative positions of the human head, chest, arms, and legs. She now asks the students to create somewhat simple sentences based on *The Odyssey*, for instance: *Wily Odysseus had his wary companions put wax in their ears immediately. He also tied himself up at the ship's mast so he could not be enticed ashore by the haunting sirens' song. Only he had the strength of mind to resist their temptation.*

While the students speak each sentence, the teacher moves with each word to a different portion of the human figure on the floor, because each sentence has all parts as each person has all parts, too. Then the teacher invites several individual students to do the same. The location on this imagined human body indicates the respective part of speech in a sentence. New sentences are made up as many students practice moving to different portions of the human body schema on the floor with each word:

Sentence Analysis

Then students bring out their language arts workbooks. They draw with colored pencils a faint outline of the human body. They write a sentence down in its regular form, and then write it again into the outline of the human body separating the words according to parts of speech. The teacher draws an example on the board, inscribing the words. After working with the class for a few sentences, the teacher asks all those who have grasped the process to make up their own sentences from the story of Odysseus and then inscribe these into the matrix of the human body. The teacher continues working with all students who are not yet quite sure of what to do.

What needs to be a teacher's preparation for such a block of language arts?

The teacher needs to ascertain the grammar goals for this age group several months in advance, considering what has been done in past years and how these skills will need to be honed by the end of the grade school years. Grammar as a subject tends to become very abstract and boring; consequently the teacher needs to make a particular effort to infuse it with imagination in order to interest her or his students. In general, human beings are always interested when presented with a topic related to themselves.

Therefore, by using the metaphor of a human body in relation to a complete sentence, we bring to students an element of personal interest. When one considers on a deeper level a possible relationship of a sentence to the image of the human body, then one might be able to find connections between the creation myths of various cultures and the meaning of human language itself. There is a very close connection between the human being and language. Through the talent to clothe ideas in words we are involved in an intrinsically human process, which we also fulfill when artistically creating poetic language and music, and factually making precise descriptions of what may be experienced through one's senses, and imaginatively projecting the future in fantasy. Language is able to express the essence of humanity itself, and as writers, whether it be of fact, fiction or idea, we create a world through words. In the age group of fifth graders teachers have the task of enticing young minds into this wonderful world of words. In this way, and others you may discover for yourself, we make the world of language a personal, and yet objective, reality for our students.

Three or four weeks in advance would be a good time to map out the actual lesson plan in general: sequence of subjects, which poems, which music (if any), which actual movement activities are suitable for depicting the essence of grammar for this age group.

Three days in advance is a good time for the teacher to form an inner picture of the essence of this subject matter again, so that she or he

involves his or her own soul experience with the subject to be taught, and fills it with warmth and enthusiasm.

Finally, on a daily basis, one needs to be clear on the sequence of the emotional-feeling impact, the volitional activity, and the conceptual conclusion because it is best to state the facts on the first day, relive them feelingly on the second day, and finally bring them to conceptual formulation on the third day, even in subjects such as grammar. It is important for students to be able to know clearly what they have learned —and the conceptual formulation helps them do this. The central portion of practicing sentence analysis to develop the feeling-emotional relationship to this facet of grammar may need to be expanded over several days, before the conceptualization takes place, that is, the clear and conscious knowledge of why the words of a sentence are ordered into different types.

What has been said above about the evening review of the day in reverse order, and the picturing of students is, of course, applicable here, as well as the preview of difficult movement learning activities.

Introduction to Numbers in Grade 1

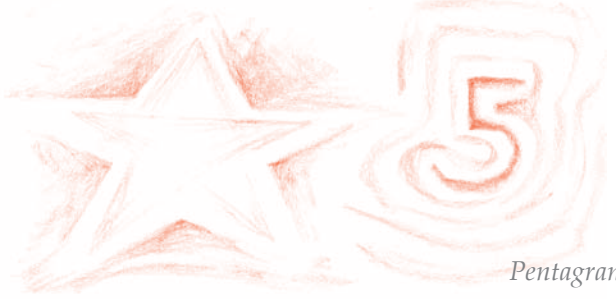
Contrary to common practice in other education systems, in the Waldorf schools early childhood age children are not encouraged to engage in any formal learning activity in their preschool classes. They are encouraged to play to the fullest, because the *activity of free play* will in and of itself help develop the preconditions for the formal learning environment of the grades. It has been noted by many professional preschool teachers in the Waldorf movement that a child's incapacity or hesitation to engage in free play— that is freely allowing imagination to determine what one plays at— sometimes will point to later learning problems.

Be that as it may, while children before school-going age have certainly a general knowledge of numbers, and many already know how to write their names, a Waldorf teacher assumes that no formal

instruction has taken place. The following example gives a glimpse into the introduction of numbers, several weeks into the school year.

We enter the classroom. The teacher has taken the roll call: she sings and the students respond. Students and teacher speak a dedication to the day and the day's work. The teacher then works on a song that has a relation to the subject matter: *Green Grow the Rushes,* an old English folk song.[8] In it the numbers from one to twelve are endowed with certain attributes (some of them mysterious to the modern mind as this song goes back to medieval times), and in the chorus these are counted backwards to the beginning. This tune lends itself to many variations, for instance one clap for the mention of *one*, two claps for the mention of *two*, and so forth. It takes a considerable alertness to sing the chorus verses in reverse order.

The teacher then asks the students to push the desks aside and clear a space in the center of the classroom, insisting on an orderly process. The students are invited to form a circle, and on the teacher's word begin to walk in a walking step around the circle. The teacher sounds the measure on xylophone bars. On a signal (three short sounds) all reverse direction. After a few minutes of establishing this walking rhythm and making sure that all students are able to follow the tones of the rhythm precisely, that is, one step for each sound, students begin to count their steps, up to 36. The teacher claps three times, the students then begin counting and stepping backwards from 36 to 1. (The zero will be introduced later.) Teacher and students spend a lot of time and effort on this exercise. The students then rearrange their desks in the proper order, books are passed out, and the written work begins.



Pentagran/Numeral 5

Today the symbol for five is introduced. This teacher uses a five-pointed star to portray five-ness. Of course, students are asked what they can think of that has five things, such as the fingers on our hands and the toes on our feet. If a human being stands with legs spread and arms stretched out, also a pentagram is formed. The teacher mentions that this is, the word adults use for this figure. The Arabic numeral five is written large on the board.[9] Individual students are called upon to copy it on the board. The teacher then asks a few students to walk the form of the symbol on the floor in front of the board, in the same alignment, that is, the top of the five is parallel to the board. All students copy this figure on scratch paper. At last a page in the *good book*[10] is prepared, the figure drawn large with colored crayon, and those who have got it right may take other color crayons and go along the form, so that in the end a rainbow five sits in the center of the page. Then, with other block crayons, the rest of the white page is filled in. Students are encouraged to follow the form of the five in completing the rest of the page.

During the last ten minutes of the class a story is told, a fairytale. Most teachers will speak a blessing with the class before students eat their snacks.

What needs to be a teacher's preparation for such a block of introduction to numbers?

In the first few grades it does not matter too much if a teacher does not read too many books in preparation, for the subject matter is relatively simple to comprehend for adults. However, what matters greatly is how deeply the teacher is able to enter into the meaning of each facet of learning, in this instance the matter of an orderly introduction to the integers.

The emotional impact of the tune described above is obvious, and such tunes or also poetry should be chosen for its emotional impact. What is also important is that poetry or songs are chosen not for the level of understanding that one expects from a first grader, but rather

the understanding we can expect that the student will reach in a few years' time. In this way we truly educate, that is, to draw out and up what lives in each child.

When we insist on exact stepping and moving, we allow students to take hold of their volitional capacities in an active way and allow them to begin controlling their motions and movement faculties in a methodical way. Particularly when asking students to speak and move a sequence of numbers backwards, their volitional capacities are being focused and honed. Finally, when we discuss everything that displays *five-ness* in the world, students enter the conceptual world of numbers. Thus we are able to bring order, sequence and the concept of quantity to our students through direct experience.

A few months ahead the teacher needs to map out what are the appropriate elements of learning that a first grader needs. The plan for the year will need to consider the sequence of all subjects.

Furthermore, the meaning of all facets of each subject needs to be thoroughly penetrated in intensive mental preparation. In the above example of introduction of numbers we may realize that each integer has a character of its own, just like each individual human being. Of course it would lead to much abstraction if we were to study the personality of numbers beyond twelve, for instance the twenty-three-ness of things, or the forty-seven-ness of things. One might leave this to the mathematicians who are concerned with prime numbers. However, the first twelve integers show personal traits and can be made a living experience to young students.

One of the most important aspects of number work in the early grades is the basis of understanding numbers as they order our daily lives deriving from our movement activities, such as the walking and counting exercise described above. A great deal of our motions, and our penetration of the space around us in movement activity, can also be expressed in numerical form. Movement activity, choreographed in a meaningful way, linked with counting activities, and a little later in

the first grade with the times tables, ensures that the world of numbers opens up to each child. The space around us is ordered, and moving in space in an ordered manner provides the foundation to experience numbers in a human-centered way.

Thus the conceptual foundation has been laid through the ordered movement experience. Later they will be combined in number sentences. In this way activity, combined with emotional appeal, leads to concepts as foundation of mathematical intelligence.

It is important for each teacher to penetrate these and other philosophical considerations of the subject matter beyond the surface facts, for we regard these surface facts as abstractions, forgetting that we once had to acquire them in an experiential and physical way. As adults we need to journey back to our childhood if we would do justice to a subject's presentation in an age-appropriate manner.

Three weeks ahead of beginning this block we then need to make the actual lesson plans, select musical and poetic work, choreograph the movement activities which will become learning activities for our students, and go through these in detail, so that we are not caught short on possible logistical problems. The choreography of these learning activities needs to be thoroughly thought through.

Three days ahead we again bring before our mind's eye the essence of the integers in connection to each individual human's volitional forces, namely the facility to penetrate the space around us in an orderly, and step-by-step, way.

Every day we clarify for ourselves what has been the emotional, what has been the volitional, and what has been the conceptual part of each lesson. In first grade the conceptual part often consists of making sure that the students know what they have learned and can express this knowledge in a simple sentence.

The principle of reviewing the day in reverse order, as mentioned above, is especially important when teaching the younger grades, as

well as the picturing of each child in as vivid but entirely nonjudgmental manner as possible.

Especially the preview of movement activities is helpful to the teacher. If one visualizes in as dramatic a way as possible the choreography of a learning movement activity, it will work much more smoothly the next day when it is actually carried out. During the visualizing process the teacher clarifies for her- or himself the instructions given to the students. This does require a good amount of concentration and effort on the teacher's part, but it will be amply rewarded in practice. We can experience here the efficacy of the teacher's focused mental efforts on the previous day supporting the learning environment of the class.

In Conclusion

As we have seen in the above examples, the importance of thorough discernment of the essence of each subject is paramount. While we can read up on what others have said about these matters, *nothing replaces our own work and mental effort*. I would like to emphasize this yet again as an imperative for good teaching.

The essence of what we have seen as applied was a point of view that put the central idea of the human being at the heart of considerations: in first grade the individual motility and physical activity of each child was addressed and required for a learning experience; in fifth grade the human form itself became the tool of learning in an applied metaphor; in eighth grade human concepts of fire, water, earth and air were used to understand and characterize earth processes.

In all the classroom events we have vicariously witnessed, we have observed the human interaction between teacher and students, and not only in an external way, because the teacher's inner work and mental preparation, going as far as working actively with the element of sleep, is a paramount aspect of this human interaction.

Chapter 2

Teacher Preparation—Working with Time

> *However, we must be conscious down to the very foundation of what we do. We must be aware that when we teach children about this or that subject, we are actually working toward bringing the spirit-soul more into the temporal body and, at the same time in another direction, to bring temporality more into the spirit-soul.*
>
> *Do not underestimate the importance of what I have just said, because you will not be good teachers if you focus only upon what you do and not upon what you are.*[11]

In looking at the whole issue of teacher preparation, the following emerges from the three glimpses into Waldorf classrooms as well as from Steiner's worldview. If we omit from our considerations that teachers follow textbooks precisely and structure their lesson plans on the say-so of others, if we omit too what is prescribed by public policy, we need to look at each teacher as creating her or his own lessons *from the very seed of the subject matter.*

We are therefore looking at two sources: the objective information contained in books, internet and personal communications from other experienced colleagues on the one hand, and the teacher's own inner, that is, soul, intellectual understanding and creative capacity on the other hand. Documented sources of information need not be discussed further here. Interaction with other teachers, conferences and so forth will enable a teacher to compile and use a list of books and sources. It is up to the teacher, then, to make good use of them in order to familiarize her- or himself with the subject matter methodically.

Regarding the inner preparation, we are here dealing with something that is not really known outside of Waldorf education and

Steiner's worldview. It is of the essence when creating an inspiring learning environment, communicating with students, and doing justice to the soul needs of children. *How can we track the transformation of knowledge that needs to take place in the teacher's soul itself?*

In this chapter I shall describe the stages of inner teacher preparation as I see them at this point in time and as I have applied them to myself in my many years of teaching. However, it is always valuable to consider that when developing a point of view it should not be set in stone, however strongly one believes in the rightness of a position, but maintain it as capable of changing over time. May the following remarks be taken in this spirit.

The Factor of Time

In order to become creative teachers, or to work in other professions involved with creative activity, we need to reckon with the element of time. We see around us the transformational action of time in external conditions as well as in relatives, friends, and acquaintances. Physically we change, even if we do not want or intend to do so. Psychologically we change, sometimes intentionally so, mostly inadvertently, depending on external or internal influences and experiences. Spiritually we may change by deliberation, by insight, by recognizing that our viewpoint needs adjustment.

Change is inherent in the passing of time. Time moves on and can be tracked in respect of the physical, as well as psychological changes in the world and ourselves. There are periods of growth and development leading up to a climax and then devolution. We may use an example from the world of plants: An annual herbal plant springing from a seed will sprout, grow and blossom, create seeds, thus ensuring future plant generations, but the parent plant will wither and die. The seed is the extraordinary facet of a plant. It is a seed of the future—it contains a future dimension in potentia. Spiritual change of human society's

outlook, often named paradigm change, takes place over centuries of historical epochs.

Another aspect of time is memory and recall. An experience or an observation will make an impression on our psyche, and this impression will fade away from our conscious awareness and actually be *forgotten.* We are able, sometimes with difficulty, to recall this impression. Of course this is a highly individualized process. Some individuals have a superb capacity of recall, even an eidetic memory; others suffer from vagueness or a very selective recall capacity. Leaving aside personal quirks, we can think of this process in its three aspects: firstly having a sensory impression, secondly this sinking into forgetting, thirdly recalling the impression as best we can.

The debate over if and where the physical seat of memory impressions is located in the human being, particularly regarding the brain, has involved psychologists, medical doctors and researchers for the best part of the last 150 years. I intend to follow another route. It really does not matter whether there is a physically definable locus of memory impressions, but it does matter when we teach children that we distinguish this threefold process and that we observe what kind of memory and recall mode applies to each student. I would like to begin with the focus on the teacher her- or himself.

Our memory impressions, when they sink into forgetfulness, enter a kind of sleep existence. They escape from our conscious everyday mind and seem to go into a realm not present, but lurking somewhere in our memory reservoir of the past. We could say that a memory impression has escaped our clear daytime consciousness and has gone somewhere else, to an unknown location.

One might use yet another image to picture the action of time in respect of memory: When looking at the hydrological cycle of water, one might view a stream of memory impressions gathering strength, width and depth as it flows from its point of origin and then empties into the ocean or a lake. Each meme (memorized item) arises like an

atom of water vapor into the atmosphere, giving itself over to the cosmos, and then, after an appropriate lapse of time, falls again to earth as rain. When water courses upon the earth itself, it follows certain channels, a prescribed order. But when it rises into the atmosphere, then this order is interrupted, and atmospheric conditions may carry it anywhere, in a kind of chaotic state, before it returns to earth as rain. Which force coerces the water vapor to form into clouds? What creates the new order and structure? Without waxing too philosophical about this question, it is the interaction of cold and warm air that helps bring about this cycle of transformation.

What has this to do with memory? To take the water cycle as a metaphor for memory, in the memory gathering action, an external structure is imposed, the structure of our sense impressions, or, stated more exactly, the collective power of our sensory apparatus. This stream of time, this stream of memory impressions, however, then disintegrates, dissipates and dissolves into the atmosphere, to be gathered together again by our own intentional action, which may be likened to creating the atmospheric conditions for consolidation, when a flood of memory images suddenly may return to our consciousness. Or a memory, long forgotten, may arise with the impact of thunder and lightning, to shake up our psyche. Additionally, in our dream life sudden unordered, uncoordinated memory impressions appear, mixing experiences of the previous day with those of twenty years ago, for instance.

Can we control the recall of memory impressions? Of course we must, because only when we can do this can we really work with our own mind, consciously and deliberately, and learn. We must then bring about the equivalent of these "atmospheric conditions" in our own soul space, in our own consciousness. What is the psychological equivalent to the interaction of cold and warm air, to the jet stream and the circling winds that disperse water vapor? Let this question stand for the moment.

One way for us to work with the element of time deliberately is to work with specific rhythms of time, meaning distinct time periods and time intervals. In the teacher's preparations for first grade, fifth grade and eighth grade, as indicated previously, one factor is working deliberately and effectively with time.

Rhythms of Time

Let us be clear here what a rhythm actually is. From a musical point of view we talk about a modification of the measure. The measure of a piece of music is rigid—it is a virtually spatial segmentation of time repeated either by a metronome or by an inward counting by the musician as she or he plays an instrument. Only when we synchronize the measure can we perform with others. The conductor of an orchestra is the overall *timekeeper*, in this sense the keeper of the measure, which she or he can modify to enhance the meaning of a piece of music.

In contradistinction, a rhythm is not equally spaced like a measure, but has different intervals of time between sounds, although the same sequence of intervals may be repeated. A rhythm indicates that something is alive, because it is the unmanifested, unseen *in between pause* that determines the rhythm. The repetition of the same sequence of pauses constitutes a rhythm. In human physiology there is a rhythm between breathing and heartbeat, usually a ratio of 1:4. In a rhythm we experience directly an interaction between the physically apparent and the unseen, unheard, one could say spiritual, element.

So if we would consider a particular subject at different time intervals, this is rhythmic. For example, if we would always do this on the first weekend of the month, this is not rhythmic, but in the form of a regular measure. A measure is rigid time, clockwork time; a rhythm is differentiated time, living time. When teaching, when being artistically creative, and when developing our own living concepts as basis for teaching, we need to use for our own development and preparation, as well as for the instruction of lessons, living time, and not dead clockwork time.

The Yearly Overview of Upcoming Subjects

Here we exercise an organizational principle by envisioning future working. A clear and general picture of future tasks enables us as adults to then begin working on the details. During the summer, when we think more expansively, more in general terms than in the winter months, we may plan the general overview of what needs to be taught in the coming year, recognize the essence of what students need to encounter, and design the sequence that most appropriately addresses students' learning experience. For example:

What is the essence of a student's experience in seventh grade?

The Waldorf curriculum indications for this year include an introduction to equations in math, an introduction to mechanics in physics, an introduction to inorganic chemistry, creative writing and poetry, the theorem of Pythagoras in geometry, world geography, some aspects of human physiology, aspects of astronomy, and history of the Renaissance and the European voyages of discovery. When a Waldorf teacher contemplates these, one might get a sense of the essence which underlies these subjects and realize that, first of all, in most subjects we need to demonstrate various aspects of creating balance between polarities, and further, that the study of mechanics might help establish the concept of equations, and therefore come earlier in one's yearly plan than the introduction to equations.

The essence of the seventh grade subject matter, appropriate to the budding adolescent, is working with polarities. Developing a capacity to bring balance from polar opposites is crucial for adolescents.

The theme of the year, and consequently the plan, will emerge only if one applies oneself with serious contemplation. This requires a kind of imaginative sense about the essential part of all subjects, and of each particular subject matter is from the viewpoint of the students at a specific age.

It requires that our own soul activity of pondering these questions be put into the memory stream, as it were, in order to begin working

within our own subconscious so that these challenging queries may develop within us in the coming months, and eventually yield the imagination that we need for the formulation of appropriate lesson plans.

An important principle emerges here, and will be pointed out subsequently again and again: *Our own soul activity needs to be nurtured in a similar, but not the identical, way as we need to nurture our students' soul experiences so that these may become effective learning processes.* If we cannot oversee our own inner soul space and actively form its focus and content, we surely cannot teach others effectively. It should be clear by now that when striving to develop imagination we must deal with different levels of consciousness than only with our clear daytime consciousness.

Transformation of an Idea from Birth to Potent Picture

Steiner described in an extraordinary way the rhythm underlying the *incarnation of an idea.*

> *Let us suppose that someone conceives an idea which fires him with enthusiasm; it takes definite form in his soul and he is anxious to bring it in some way to fulfillment. Now as a rule it will be harmful if at this stage a man does not let the idea rest as it is but proclaims it at once to his fellow men or to the world, for the idea must follow a quite definite course. It must take deeper and deeper hold of the astral body[12] and then impress itself into the etheric body[13] like the imprint of a seal. If the idea is of no great importance this process may take seven days—that is the minimum time necessary.*

It may show itself after seven days that the idea is no good, far-fetched, fanciful, or otherwise useless, in which case it should be discarded. However, this process may continue:

> *If the idea is to continue to thrive it must now lay hold of the outer astral substance, which always surrounds us. Hence it must*

pass from the astral body into the etheric body and from there into the outer astrality. For this, seven more days are needed. …[I]f [the person] pays attention to what happens, that after this period something from without comes to meet his idea, he then recognizes that it has been beneficial to wait fourteen days, because now he is not alone with his idea. It is as if he had been inspired from the Macrocosm, as if something had penetrated into his idea from the outer world. He will then for the first time feel in harmony with the whole spiritual world, and will realize that it brings something to him when he has something to bring to it. A certain feeling of contentment arises after a period of about twice seven days.

It has then become concrete and the temptation to communicate it to the world is very great. We must resist this with all our might.

The idea, while fructified by the cosmos, is, however, still cold. It must undergo further transformation, be filled with the warmth of the astral body again and take on a personal quality. We need to wait another seven days, now twenty-one days from the original idea.

That to which we gave birth and have allowed to be baptized by the gods may now be given over to the world as our own. Every impulse in the soul must pass through these last three states before it becomes fully mature.

In the case of an idea of weight and importance, longer periods will be necessary, but always in this rhythm of seven to seven.[14]

This is a striking description of the life cycle of an idea from birth to potent picture and presentation. It invites us to work deliberately with such a process when preparing ourselves for teaching, so that the content of our lessons is filled with living, not dead, ideas. This process described by Steiner above must become a habit for us, for it is the only way that what we have to say to our students is not intellectually thought out but alive with the promise of eliciting their enthusiasm and active participation.

What the stages of this process facilitate to happen

Day one: First, we must actually have an idea in as much clarity as possible. It can be the result of strenuous intellectual inquiry and study. We infuse this idea with a lot of power and energy through the forces in our astral body.

After one week minimum: We remind ourselves of this idea, but allow it to sink again into our subconscious, that is, we do not worry it to pieces. It is there that the imprinting from the astral body into the ether body takes place. We cannot do this in the light of our consciousness but must have the faith that our non-physical constituents *know what they are doing!* If we allow the idea to surface at this point it will be relatively cold and not yet alive. If the idea is not very important, it will probably fade away and we shall forget about it. However, we may be so connected to the idea that the enthusiasm we have for it changes into love.

After two weeks minimum: We allow the idea to rise again into the astral body. (We are fully unconscious, as in sleep, in our ether body, but we are often semi-conscious of the events taking place in our astral body.) We allow it to wallow, and gambol, as it were, in our semi-conscious soul arena. It will emerge at times and again go under, continuing to gather strength. Cosmic forces, the external astral forces, interact with the idea, play with it, modify it, and give it life.

After approximately three weeks: If we now again take hold of the idea with our consciousness, recognize the transformation it has undergone in our quiet and hidden intercourse with the cosmos, permeate it with the warmth of our own enthusiasm, then we are ready to deliver it to others. After it has again gone into the ether body, it is ready to be formed and formulated.

This description of the interaction of our own soul activities with those of the cosmos, or the Macrocosm, is a difficult concept for those modern human beings who have been accustomed to look at themselves as contained within their own skins and being entirely separate entities.

However, a certain amount of introspective consideration will easily reveal that we are not separate entities but are actually in continuous interaction with other human beings, and with animals and plants, on the subconscious level. The best-educated individuals of several hundred years ago recognized this interaction with the cosmos and the cosmic forces. Our modern consciousness tends to isolate us in fact as well as in deliberation from recognizing our connectedness with others. But we might also realize that in art and literature the relationship of human beings with the cosmic forces of life and transformation are often depicted, for instance in a story of the great romantic poet and thinker, Novalis. He described in the compellingly vivid tale of Eros and Fable that the child takes the serious notations of the accountant, but, after dipping them into the water of life, only the child's scribblings remain, and the abstract notations are erased.[15]

In the interplay between astral and ether forces within us in the course of this process, the ether forces are the formative forces, and so enable us to form a picture based on the original idea. Then we need to allow the process to continue through to the final formative event. The sequence of the transformation of an idea, outlined above from abstract in its original state to a livingly transformed artistic and imaginative picture may be undergone by anyone and be proven effective to ourselves in practice.

In conclusion, we must fill ourselves with our own ideas about the subject matter through our own effort so that the transformation into potent ideas, which then become the basis for our lessons, may come about. If we only take on what others tell us, if we imitate others' ideas, the transformation process cannot unfold, because others' ideas lack the individual energy and personal involvement, the drive and power to be transformed in the course of months and weeks within our own soul. It is possible for human beings to be so enthused by the ideas of others that we enter into them thoroughly, assimilate them and so make them our own; in this case they will inspire us also in the above fashion.

Transformation of Ideas

Concerning fanaticism and authoritarianism, in either case we give ourselves over completely to an idea or a paradigm that did not originate within ourselves. We, in effect, become mental slaves when we believe uncritically in another's set of ideas. We become physical slaves when we unthinkingly carry out that individual's wishes. In either situation we are not free to determine our own focus by insight or to direct our own actions responsibly. Some reflection on these matters will show us how often we fall under the sway of others in this respect. Only if we accept another's idea or viewpoint after critically scrutinizing its foundations and thinking through its basis, would we then be able to act and think out of what Steiner calls *inner freedom*.

In showing the transformation of an idea from its sudden appearance into a living idea, we actually make this idea not only alive, but also palatable to others. It is then not coersion, like the ideas which enforce fanatic responses, but an idea that is permeated with the recipient's own feeling, open to modification in the course of time. As Steiner indicates, a *cold* idea can become a source of fanaticism; a *warm* idea, that has undergone transformation over time, and has been

enriched in the creative process, enables the recipient to elaborate on it, to add to it, and to incorporate it in such a way into her or his soul realm that the idea can continue to grow. When considering this from a teacher's viewpoint, we should not underestimate the importance of bringing *living* ideas to our students. *Cold and abstract* ideas will sit in a student's mind like rocks. *Warm and living* ideas will expand to accompany the student's mind as she or he grows in understanding over the course of years.

Age-appropriate Lessons and the Three Forms of Memory

When a few weeks before beginning a new subject the teacher makes the detailed lesson plans, one important factor to consider is also how to stimulate the students' memory, and thereby their knowledge of what has been learned. For this reason it is good to be clear about three forms of memory, and that we stimulate these through different processes. Localized memory is related to a specific site in space; rhythmic memory is mainly active regarding language and music; intellectual and visual memory allows us to store inwardly concepts and pictures.[16]

Localized Memory

This occurs when we remember something only by returning to the location at which an event took place. It is the form of memory that underlies the concept of memorials, for instance. The tendency to place a statue or other memorial to commemorate an event (note word derivations), goes back to prehistoric and ancient times. As far in the past as the ice age human beings have marked their presence in a variety of ways, for instance inscribing symbols in caves to celebrate the seasons or cosmic astronomical events. Of course animals also mark their territory in a variety of ways, but with human beings it is not so much a marking of territory as an assertion—*I have been here, this I have done.*

In the ancient empires the ruler would routinely make a circuit of the boundaries of his realm, and marker stones would be erected. A ruler having fallen into disgrace, his markers would be destroyed, and his statues defaced.[17] In many parts of the world the ceremony of walking the boundaries carried over into medieval times.

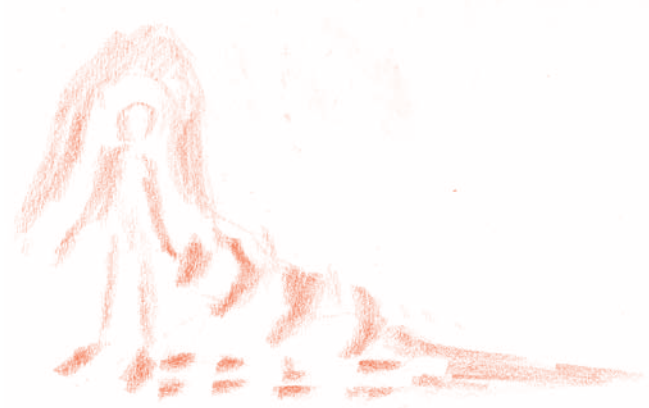
Today, we fall back on localized memory when we forget where we have placed an object, for instance our car keys. We walk back to the location where we know we had this object last, and thus awaken our memory and find what was displaced. (We probably use localized memory more often than we realize!)

Regarding teaching and learning activities, whenever we work with students on a movement activity, such as described in the examples above, or any other such activity requiring bodily involvement, we allow repetitive action to insert items into the students' memory pool, even without addressing the meaning conceptually. The choreography of a process in action, which eventually will become a purely mental process, is a vital part of a teacher's preparation. Therefore, our first task is to determine out of our own understanding of the essence of the subject matter what is the movement learning activity that will stimulate localized memory.

We lay down a trace of ourselves with every action we take. If we were able to retrace our steps during a day, during a week, during a year, during a lifetime, we would develop a visual picture of our steps, our movements in the world at large. We might say that we leave minute traces of ourselves embedded in the environment. On a non-physical level, we leave traces of ourselves, now intangible, for when we act externally, our actions have consequences. It is easy to track these consequences, for instance, if we lay bricks or cut down trees. Then the consequences disappear from our personal view and become part of external existence and, for instance, someone not known to us moves into the house we helped build. Nevertheless, a part of ourselves is now irretrievably a part of this house.

Steiner goes as far as indicating that the world at large contains memory impressions made by our own actions, and, just like other memories, these may be retrieved. In due time, perhaps even many years from now, these external consequences of our deeds return to us. This is karma, events which on the surface are not intelligible to us, but which nevertheless are consequences of past actions.[18]

In any event, the basic creation of learning activities involving the whole body is essential for lesson planning several weeks in advance. Furthermore, we need to address rhythmical and intellectual memory.



Localized Memory

Rhythmical Memory

Whenever we learn something by heart, we apply rhythmical memory. What is the best way to learn a poem, to learn the multiplication tables, to learn the lines when preparing to act in a play? We usually tend to walk up and down, while repeating the lines many times over. What is the best way to learn a piece of music or a song? We usually play or sing it many times over.

This repetition is what makes rhythmical memory work. There is a curious aspect to rhythmical memory: We do not necessarily understand intellectually what it is that we are learning; however, eventually we will understand. If we are a Shakespearean actor, it is

unlikely that we shall understand the depths of the verses we speak at the beginning of our career. Eventually, though, our understanding will grow. Repetitious experience awakens our understanding.

This fact has enormous consequences for teaching. We should not hesitate as teachers to introduce our students to poems, stories and music that they will not as yet fully understand, for this understanding will grow in the course of time.

So, when preparing lessons several weeks before starting a new subject, we should identify the emotional, feeling impact we want to give our students through poetry and music. While eighth graders may not yet fully understand all aspects of a poem such as the *Rime of the Ancient Mariner,* it will nevertheless appeal to their feeling and so insert the feeling dimension into their class experience.

Another aspect of employing rhythmic memory practices (repetition) has to do with facts that simply have to be learned before they are fully understood. Examples are the multiplication tables, which derive from patterned ordering of the number line. There exist many activities known to Waldorf teachers to practice rhythmically, repetitively and with bodily movements the multiplication facts, division facts, basic addition and subtraction facts in order to deeply insert them deep in the students' memory system so that they will always be easily available to the conscious mind. If these repetitive activities are accompanied by the reciting of facts they are especially effective.

Rhythmic Memory

As teachers we need to be aware that when engaging our students in such activities, we are employing the capacities of rhythmic memory. We should recognize that repetitive recitation creates its own energy, its own momentum, which carries the speaker on to the end of the poem, song, or text.

Cognitive Memory

The most abstract form of memory is one through which we remember concepts. We therefore need to determine, at the time of making lesson plans, what the intellectual goal of this subject block is to be, and which concepts should become internalized by its end. We are now at the point when it is important to be aware that there is a distinct difference between the learning process of an adult and of a child. While we do not tell a first grader that he will learn to do multiplication, but rather engage her or him with the physical and mental activity that will result in the capacity of doing so, with an adult we need to be up front and direct about the learning goals. If we are not direct towards an adult, we are basically exerting mind control and conditioning.

With children, cognitive memory needs to arise through understanding, and this understanding of the complexities of the subject matter is not in existence at the beginning of a study, but develops slowly. It develops through movement activity and rhythmical and repetitive practice. Later in this book we shall describe the optimum learning process for children. Here, let it be said that it would go entirely against the natural inclinations of children to begin with abstract and intellectual content.

With children it is good to help them formulate the conclusion of what has been learned, preferably through discussion and dialogue, so that there is active participation. In a Waldorf school the teachers use a great deal of conversation and discussion with the students as a method of deepening aspects of the subject matter. Calling this the *Socratic Method*, interaction about the essentials is a primary goal,

because personal communication and questioning stimulate the mental processes of students, and often, if difficult questions are being asked, result also in a teacher's having to exert her or his own mental and imaginative powers. The teacher, moreover, in directing this dialogue, should help formulate the conclusion of the experience, or the rule that has emerged, in a phrase, dictum, sentence, and so forth, and help the students to write down this conclusion in such a form that it can be used as the foundation for future learning.

Conceptual Memory

Concepts suitable for inserting into the memory reservoir of what has been learned then become firm facts, and as such form the end result of a learning process, not the beginning.

The Three Forms of Memory and the Three Soul Processes

Inherent in the stimulation of the three forms of memory is the deliberate cultivation of the three soul processes of the human being. The three vital psychological processes of the human mind—cognitive, emotional and volitional activity—are linked directly to the processes by which we lay down experiences in our memory as described above. When active with our bodies, moving about, whether it is haphazard or deliberate, we experience ourselves within the framework of localized memory. When speaking poetry, reciting epics, singing songs, learning a speech, listening to music, and so forth, we move within the framework of rhythmic memory. When reading or listening and applying ourselves cognitively, that is making the effort to understand what we hear, observe or read, we then apply our intellectual, or abstract, capacities of memory. We also lay down a cognitive memory when

we see a situation, a diagram, a chart, and draw cognitive conclusions from it. As an adult we have learned to do this. As a student we acquire this ability over time. Understanding, that is, grasping conceptually what meets us from outside or from within ourselves, elicits this most abstract, but intellectually most fundamental form of memory.

At this point it is good to remind ourselves that the three different fields of soul activity—the volitional, emotional and cognitive—also display different forms of consciousness in their pursuit and expression.

The only activity we must carry out with the full light and clarity of our consciousness, in other words the only activity where we must be fully awake and aware, is our cognitive activity. When thinking, we must be awake. Often when thinking difficult ideas we feel ourselves to be *super awake*. We feel the need to concentrate the light of our inner being, our self, on the content of thoughts and concepts, so that we may go from idea to idea, thus weaving a coherent body of concepts.

When we engage in a feeling and emotional experience, this clarity of experience is rarely present. It may be likened to a dream state, because often the impact of such an emotional experience is made by a scent, a picture, a word, a piece of music, a location, or the memory of a location. The origins of such feeling experiences may be purely physical, arising from sense impressions or our own body condition, or they may be purely mental. Such *daydreaming* may often fill us with feelings, with joy or dread, with empathy or rejection. It is possible to neutralize our feelings and not react with one or the other extreme; then we may be able to establish a mood of serenity within. From the viewpoint of education, however, it is good to call forth strong feelings in our students. Such strong feelings will help deepen and anchor what we intend our students to remember. Steiner explains that in the course of life our feelings need to free themselves from being based on the physical and should become grounded in our soul (non-physical) world of experience.

The course human life follows is such that feeling, which is at first connected to willing, slowly separates itself from willing during the passage of life. In education we are quite often concerned with the question of separating feeling from willing. When freed from willing, feeling then connects itself with thinking cognition and is concerned with it in later life. We properly prepare children for later life only when we enable them to successfully separate feeling from willing.[19]

When involving ourselves with volitional activity, we must realize that it consists of having a picture of our bodily movements, filling this picture with energy, with intention, and then carrying out this movement. At no time are we conscious of what muscles and nerves actually *do* in our body in order to carry out our intentions. This is a very curious fact. If we were fully conscious in our muscles and nerves, we would be paralyzed. It is important to realize that we are asleep regarding our bodily tools for the execution of intentions. Steiner describes the three soul activities in the following way:

Life in the waking state is essentially concerned with our mental activity. Of what we are thinking we are fully conscious in the waking state. … And if you compare the experiences of your world of feelings with those confronting you in the manifold imagery of the dream world, you will find the same degree of consciousness in the world of feelings that you do in the world of dreams.

What remains still more unconscious—it might be said, wholly unconscious—are man's will impulses. Suppose that you stretch out your hand in order to grasp something. First you have a mental image of the fact that you are going to stretch out your hand. This is what you intend to do. But how this intention streams down into your whole organism, how it is imparted to the muscles, the bones, so that your hand be enabled to grasp an object, of all this you know as little as you know, in your ordinary consciousness, of what happens to your ego [self] during sleep. Only after grasping the object, do you become aware—again by means of a mental image—of having carried out a movement.[20]

We may say that the different forms of memory are connected with the three soul processes that we need to cultivate during our instructions in a variety of ways, such as in the examples described in Chapter 1. At this point we will elucidate further how to work with the three soul processes in practice.

Since children are in process of growing, not only physically, but also mentally, for each age group a slightly different approach is needed. We shall therefore describe some essentials regarding the psychological development and confine ourselves to the grade school years, first grade to eighth grade.

We have discussed in this chapter the time intervals necessary for preparation and for the creation of appropriate learning activities. We have pointed out the necessity for a teacher, who is free to develop her or his teaching material within broad guidelines such as in a Waldorf school, to strenuously envision the facts and details of the subject matter, to not shrink from intensive mental penetration of the essence of a subject, and to develop a clear idea of this essence so that the mental process may work in the teacher's soul and help develop the imagination that is needed.

The above considerations have shown us some aspects of a teacher's learning process. What now needs to become the center of our deliberations is the learning process in children.

Chapter 3

The Key Picture of the Learning Process and the Three-Day Rhythm

Naturally it would be quite wrong if a teacher would impose her or his personality and personal predilections upon a student. It would mean reducing a child's possibility of advancement. We could help ourselves in this respect extraordinarily by meditating deeply that all education in actuality does not concern the spiritual being of the child, which must follow its own laws of development and becoming, and our task as educators largely is to acknowledge this independent, eternal, and spiritual being of the child without wishing to change it. Conversely, we must work diligently to remove obstacles that may be lodged in the physical and life organism with which the eternal being clothes her- or himself.[21]

Steiner asserts that we must recognize the independent being of a child and that everything we do in a classroom setting, as parents, as other professionals dealing with children and adolescents should be directed towards removing the obstacles that the physical constitution, as well the particular nexus of life forces, or the ether body, represents.

This implies that contrary to a great deal of public policy and opinion, university professors and education specialists, a human being in the first two decades of life seeks to become a being able to realize her or his deepest intentions and desires. These desires and intentions are not fully conscious at this age, but are lodged deeply within the essential, spiritual self. Steiner proposes an independent spirit of each human being, who has existence before birth in the spiritual world, who for a time puts on the garment of a physical and life body, and who after death will again have an entirely spiritual

existence. By not recognizing the spiritual being of a child, we condemn her or him to be shackled to the chains of materialism, enslaved by the conditioned thinking produced by today's positivistic outlook. If we believe that our brain and the central nervous system determine all mental and spiritual capacities, we ourselves are stymied in expressing our essential self and continue to be a slave to matter.

Stated clearly, everything that manifests itself in a physical-material way—human bodies, animals, plants, minerals, heavenly bodies—is the result of prior purely spiritual activity. If we are able to shift our focus from the material to the non-material perspective, and attempt to view all dimensions of nature and its laws as manifestations of spirits, then we are compelled to develop a different perspective of education altogether. It is this different perspective of education which lives in Waldorf education.

A personal comment: I have observed many times teachers in Waldorf schools who are new to the pedagogy and also new to its spiritual dimension. For a year or two such a teacher might be reasonably successful if she or he has not yet fully accepted the spiritual and philosophical basis for the education and Steiner's worldview. If a teacher continues to apply Waldorf methods on the surface, without accepting the spiritual reasons behind them, then such a teacher will eventually stop being successful, will fail, and will, in effect, be rejected by the students and her or his colleagues. A measure of honesty with oneself is therefore required, because it will not be always apparent to others if one is truthfully working to deepen one's understanding of the spiritual dimensions of the pedagogy.

The Human Constitution

Apart from the human physical body, and the nexus of life forces often referred to as ether body, the human being has a nexus of consciousness and movement forces, often referred to as astral forces,

and her or his essential and eternal self.[22] The boundaries of these constituents are an important factor for educators.

The boundaries of the physical body are easily demonstrated—our skin. The boundaries of the life body, the ether body, extend outside our skin and are in contact with all living beings outside as well by a process one could call spiritual osmosis. Most of us may notice that some environments cause us to feel tired and listless, others seem to perk us up and make us more alive, for example, the difference one may feel between living in a city and experiencing nature as unspoiled as possible.

Regarding our forces of consciousness, we already have discussed these by mentioning volitional, emotional and cognitive capacities. The differences between these are not only in degree of consciousness, but also in quality: Cognitive forces are focused and experienced as centered in our head. Physically the brain is the organ of centering our cognitive forces, while with our thoughts we can reach out around the globe and to distant stars. Even as the mind can reach out to distant objects and ideas, we often overlook objects and ideas close to ourselves physically, and refrain from thoroughly penetrating them with our attention.

Emotional forces are flexible and experienced in our heart region; but we are also able to cast them far and wide. At times our breath and heart rates indicate our emotional reactions. This may be the result of wide-ranging thoughts or of physical exertion. The emotional-feeling arena provides a meeting place of the cognitive and the volitional forces in us. It also provides a meeting place of bodily and mental activity.

Volitional forces, mysteriously directing our actions, are active in our metabolism and also reach out into our surrounding and are able to change conditions in everything there. Whereas we may intend to change the world with deed and action, in effect we can only change what we can physically touch, if we have the technical ability and the tools to bring about such change. Our bodily actions are restricted to

our immediate environment, while our intentions may reach out to distant goals. Technology enables us to extend our physical reach far beyond our physical bodies, as far as the mind can conceive, within material parameters.

Another difference between volitional, emotional and cognitive activity is in the arena of consciousness: we are most fully aware of our mental, cognitive focus, less aware of our feelings, and not aware at all, as if we were asleep, of the action of our volitional forces. We perceive the end results of our volition, and our metabolic activity, but do not penetrate with our consciousness how this activity takes place in detail. This is an important distinction, because it influences the way we need to teach all skills that have a physical basis, such as writing. Hence I used the term *movement-consciousness forces* to describe our astral configuration.

Our eternal self is not restricted to our physical bodies or by time or space. While we first know ourselves to be an independent entity at about the age of three, we are aware of changes taking place in our abilities, outlook, likes and dislikes, friends and relationships over time. However, we always regard our essential self as being a whole, and continue, over a lifetime, to discover new facets of our own personality and self.

Steiner states clearly that as educators we should not think of changing the spiritual being of our students, but rather discover any obstacles that manifest in the physical and ether bodies so that a healthy and aware spirit entity may make proper use of its tools for physical existence. If we indeed educate students to become sensitive, observant, agile and nimble, well-oriented, conscious of time, and so forth, we are indeed removing obstacles from the body.

The Task of the First Day—One Purpose of Drama

From the students' point of view, on the first day of introducing any sequence of subject matter, we need to point to what can be observed in

actuality. What are the givens, the observable facts, which indisputable elements have been met? Depending on the class age and the subject, we begin with a demonstration, a story, a picture, and so on.

For instance, for third graders learning about measures, we might have students measure the dimensions of the classroom with tapes and yard sticks. Of course we shall have to introduce them to the tools first, then divide in teams for the measuring activity, possibly designating a note taker, then let them get on with it, and finally discuss the results as a class.

It is helpful to note in one's lesson planning, several weeks before, as described in the last chapter, when these first-day tasks are to take place. For example, depending how one has divided up the block on measurements, such first-day tasks could be set up for linear measure, or liquids, or time, or volume, and so on, each introduced with an experiential activity. It depends on the inventiveness and imagination of the teacher to arrange an activity with the greatest excitement potential, so that a deep impression comes about in the soul and mind of each student.

What takes place in these learning activities? The mind, the attention, the perceptions are focused on a very narrow point. It is a cognitive activity, not from the point of view of understanding, but from the point of view of perception. The focused activity of our sense perceptions is directly related to our cognitive abilities; however, it is a beginning phase of understanding, not the final purely mental formulation.

As our sense perceptions depend on what is actually taking place at one point in time, we can relate them to our volitional activity. Like our metabolism, we do not experience what takes place in our eye and the optical nerve at the moment of looking at an object; this feature of our physical body is hidden from us. We are aware of the object that we observe, as we should when directing our attention to it. As a matter of fact, if we want to picture our conscious attention when observing

with any or our senses, an incoming arrow from the surrounding to a center would accurately reflect our consciousness. Whenever a person describes being distracted and therefore having no accurate recollection of what she or he ought to have observed, then such a distraction could be pictured as other centers of attention near the required object.

These comments point directly to a teacher's task during a learning activity, that is to help focus the students on the object to be observed and discourage distractions. There are many pedagogical methods to help achieve such focus.[23] Many such methods depend on the teacher's capacity to accurately sense the disposition of her or his students and to prepare them for focused attention. Using a story, however brief, to introduce a learning activity allows students to *put themselves into the picture* that is presented, and putting themselves into the picture, identifying with a character and so forth, involves a student with the subject matter. This is also one of the reasons for using a great deal of physical learning activities.

When do we experience ourselves most directly as an active being? When we move, perceive, act, agitate our bodies, when we act in a drama, living ourselves into a role. We know that we are not the character of the drama, but we identify ourselves for a short while with this character and act out the words and gestures such a character would perform in real life or in imitation of real life. For this reason, when as Waldorf teachers we work on a drama, we have the unique opportunity to compel students to become truly present in the moment and to carry out thoughtful and self-permeated actions. Drama is therefore a vital aspect of preparing individuals for being attentive, and all performance arts help students to become more alert and present in time and space.

All learning activities that dramatize and imitate phenomena of the natural world, such as in earth science, or a mental process, such as in grammar or number work, therefore impel students to become more present in the moment, more alert and conscious, and help those who

have difficulties with their attention spans. Moreover, an enhancement of the self takes place whenever we carry out dramatizations of a piece of learning, such as the measuring activity described above.

In summary, as teachers we should use dramatic experiences and learning activities to stimulate our students' focus on time, space, form, color, gesture, word, sound, music, or whatever, so that such a learning experience becomes deeply rooted in memory.

The Second Day—Relive Feelingly an Experience: Examples from Math and History

Of course we need to review the contents of yesterday's class. However, we introduce another quality into this review, different from the focused action experience. While we remind students of their activity, we play with the many possibilities to expand their imagination. In the case of measuring, we might ask questions about the distance from one end of the school building to the other, we might ask students to estimate distances, ask them how many inches, or feet, or yards various objects are before we measure them accurately, have them exercise their imaginations with such questions. We could get quite dramatic with our questions and allow estimates of the large and the small, and in doing so, expand and contract the students' internal field of vision. By playing with the possibilities, we massage, as it were, the students' feeling and emotional connection to the subject, especially if we begin discussing imaginary objects and characters. *How high was the beanstalk that Jack climbed? How wide was Paradise? Noah's Ark?* And so forth.

By playfully bringing up the very large and the very small in the students' consciousness, and particularly linking it with well-known story contents, we stimulate the emotional-feeling aspects of the students' souls, and establish memory linkages, too. Also, a kind of breathing takes place whenever we allow students to experience contrasts between the large and the small. The more emphatic and

dramatic an experience has been on the first day, and the more emotionally charged up it has become in recollection, the more firmly are the fundamentals of a learning experience established in the cognitive arena of a student. Consequently it is one of the most important tasks of a teacher's preparation to devise dramatic learning experiences. And then to transform these learning experiences in review with many *what if* questions into emotional experiences.

Another example of this moving into emotional experiences may be taken from history. In the Waldorf curriculum history proper is taught from fifth grade on, while earlier stories connected to local events. If a teacher describes, as factually as possible, the details of, say, the battle of Marathon, indicating the layout of the Persian and Athenian positions, the battle, the leadership of Miltiades, and so on, on the first day, then on the second day students could enact a discussion between Miltiades and his fellow commanders regarding the overwhelming numbers of the Persians, regarding their possible destiny if King Darius wins, regarding the lack of help from the other Greek city states. Moreover, some commanders wanted to withdraw behind the walls of Athens, and not fight on the open plain. An event such as this, which would have prevented the rise of Greek culture in the world, deserves then to be emotionally lived through by the students on this second day, exploring all possible outcomes of the event.

In short, we need to review the facts set out on the first day and then attach to them as much emotional-feeling content as possible, so that these facts are clothed in color and form and can live in a child's imagination.

The Third Day—Cognitive Conclusion

We review again, the factual description and experiential activity of the first day and the feeling content of the second day. We now ask the students to discuss the essence of the material. In conversation we lead students to formulate conclusions. What are the rules for

relating inches, feet and yards? What is the consequence of the victory at Marathon? By asking students to distill the experiential and feeling classroom proceedings into sentences, and then noting these sentences in their books, we help them to formulate the cognitive conclusion. This would be appropriate for the middle grades. For the early grades the teacher needs to make the formulation, and probably write it down on the board, to be copied by the students into their books. For the later grades, say from sixth grade on, students need to work out their own individual formulations as the conclusion of the three-day learning process.

It is tremendously important that the teacher does not forget this third-day summary. Students need to have the model of taking something experiential and working it through to the clear distillation of thought. They need to follow the path from perception through to enlivening the inner picture, the inner imagination, and to the conceptual conclusion. In this way the conceptual capacity in a student's soul is stimulated and brought to life. In a later chapter we shall discuss in more detail the specific stimulation of the cognitive element and how a teacher may enhance this stimulation.

Suffice it to say at this point that the *third-day bringing-to-conclusion* is essential for many reasons, among them the reason that now *the student knows what she or he has learned in school*. This question is asked often by parents, family and acquaintances, and so deserves to live in the awareness of the student.

The Learning Process in Children and Its Key Sequence

If we now take into consideration everything mentioned so far, the three areas of the psyche, the descriptions of actual classes, the reflections regarding memory and consciousness, we should become aware that not only the substance of learning but the sequence, the timing of different experiences is of the essence.

Conventional schooling begins and ends with the head, leaving it up to individual students and teachers mostly to involve the other parts of the human being, that is the heart and the hands. What is done in conventional education is to approach the most conscious part of the psyche, the intellectual pole first with observation and theory, and after that to try to demonstrate the accuracy of the theory in practice. The result of this approach is that a set concept is implanted into the student, leaving little opportunity to question, consider and expand it.

> *Thus, the form of the human body is an expression of how the human soul is created from the cosmos and what is received from the cosmos following this separation. When you observe things in this way, you will more easily see that there is a tremendous difference between the development of will and that of thinking. If you particularly emphasize the development of thinking, you actually direct the entire human being back to prenatal life. You will injure children if you educate them rationally, because you will then utilize their will in something they have already completed—namely, life before birth. You may not mix too many abstract concepts into the education you bring to children. You must bring in more pictures. Why? These pictures are living pictures that go through imagination and sympathy. Concepts are abstractions, and they go through memory and antipathy. They come from life before birth. If you use a lot of abstractions with children, you will stimulate them to concentrate particularly intensively upon the formation of carbonic acid in the blood and upon the crystallization process in the body, upon dying.*[24]

If we picture a human being as she or he stands before us, with head, trunk and limbs, the effective sequence of the learning process becomes apparent immediately. The very form of the human body is indicative of the three areas of the psyche—the cognitive, the emotional-feeling, and the volitional, represented by the head, the trunk and the limbs respectively. If we begin the learning process by addressing the head, as is done in conventional education, *and teach from the top down*, we will

establish abstract concepts as fixed structures in the child's psyche. If, however, we begin by addressing another region of the human being, namely the trunk, the heart, the feeling-emotional-rhythmic arena, and then, stimulated by a picture a teacher brings to the class, initiate movement, limb, or body activity, then the underlying idea or concept has the opportunity to be experienced first, and then the conclusion is formulated as the result of experience, and not the other way around. In the examples in Chapter 1 this sequence of the learning process has been illustrated. All true learning is based on doing, on experience.

In working deliberately with the element of time and a three-day process, the sequence from the imaginative via the experiential to the final formulation of the cognitive is thus demonstrated.[25] As a consequence, the ideas and concepts with which Waldorf alumni enter the world of further training and practical life are flexible, adjustable and alive. These living ideas can contribute a great deal to society at large.

When working on lesson plans, we therefore need to consider how to integrate this three-day process in a practical way: what the introductory comments or image are going to be within a subject matter; what the movement or learning activity should be; and finally, how to conduct the conversation leading to a conceptual formulation of what has been learned and experienced.[26]

To consider also is that in each lesson there are various portions: a poetic-musical element, a review of the previous lesson, a focus on the new material, the activity belonging to new material, the determination of the conceptual and abstract conclusion, and finally the practical book work. This sequence changes with the age group and can be modified by the teacher, although the lesson dynamic, roughly going from the rhythmical to the experiential and finally the conceptual element, should be more or less retained.

Flow chart combining the lesson dynamic with the volitional, emotional and cognitive experiences: [27]	
Time	
20 – 30 minutes	Artistic-rhythmic, music and poetry
20 – 30 minutes	Review of prior day's work, leading to consolidation and formulation of underlying concept
30 – 40 minutes	Body movement and choreographed learning activity
45 – 55 minutes	Written work presenting the concept

This is the simple flow chart of one such main lesson. It becomes more complex, however, when the threefold approach needs to be spread out over several days, so that the three-day process can be used to facilitate the ingestion of the material and the comprehension of the fundamental concepts.

Flow chart of threefold dynamic over three days:			
Day One	Day Two	Day Three	A New Day One
Artistic-rhythmic music and poetry. Introduction to day's work[28]	Artistic-rhythmic music and poetry. Introduction to day's work	Artistic-rhythmic music and poetry. Introduction to day's work	Artistic-rhythmic music and poetry. Introduction to day's work
Body movement and choreographed learning activity	Review of prior day's work Feeling/emotion recapitulation of prior day's experience	Review of prior day's work Consolidation and formulation of underlying concept	A new facet of the subject: Body movement and choreo-graphed learn-ing activity
Illustrations	Write reviews of experiences	Formulate and write down the conceptual conclusions	Illustrations

However, while the above chart gives an idea of how the threefold process spreads out over three days, it does not yet show the true integration process. Here is the final, and quite complex dynamic, spread out over several days.

Day One	Day Two	Day Three	Day Four	Day Five	Day Six
Rhythmic introduction[29]	Rhythmic introduction	Rhythmic introduction	Rhythmic introduction	Rhythmic introduction	Rhythmic introduction
Review of prior day's class	Review of prior day's class	Review of prior day's class	Review of prior day's class	Review of prior day's class	Review of prior day's class
Movement learning activity	Variation of movement work	Variation of movement work	Movement learning activity	Variation of movement work	Variation of movement work
Illustrations or text from previous days	Feeling/ emotional recapitulation of prior day's work		Illustration or text from prior day's work	Feeling/ emotional recapitulation of prior day's work	
	Writing observations and experiences	Formulation of underlying concepts and conclusions		Writing observations reviews and experiences	Formulation of under-lying concepts and conclusions
		Write text of formulation of concepts			Write text of conceptual conclusions

This third flow chart depicts the dynamic as it changes over several days. A teacher needs to feel free to change both contents and dynamic whenever students bring up important issues. Sometimes these arise spontaneously in the course of lessons, and as a teacher one needs to pay heed and listen.

What is the essence of the three-day process?

It must be apparent from the descriptions above that the starting point has to do with an enrichment of sensory perception, 1) beginning with the focus developed by the teacher for her or his class, then 2) this group of perceptions taken into sleep and worked over by the subconscious part of the students' souls, and finally 3) being brought to clear consciousness by the teacher on the third day and developed into an idea or concept through discussion and conversation. With grade school students, up to about sixth grade, the wording of the formulation is enough of a cognitive goal. From sixth grade on we assume that the cognitive and intellectual capacities of students have developed to the point that a more abstract understanding takes place over and above the language of the formulation of conclusions of experiences, and we can ask the students themselves to come up with a final formulation.

How does the enrichment of the sense perception lead to cognitive development? Why is it beneficial for students to allow sleep, and the consequent activity of the subconscious, to help assimilate the experiences of the day?

Chapter 4

The Heart of the Matter—Intelligence

Not only has thinking gradually become more and more abstract, but also so has everything relating to the content of the human soul. At most man is still aware that his highest soul faculties originate in sudden flashes, and he is especially proud when something occurs to him in this way. Since man experiences what may be the most valuable element in his soul as severed from the universe, he becomes inwardly barren and lifeless, alienated from reality.[30]

In today's world thinking and its application have become mechanized in practice, and in actuality when employed by computers. We have become habituated to a direct and linear approach for solving problems using unassailable logic in a mechanical manner. We have gone so far with this mechanized and linear approach that we use mechanical means to measure intelligence and so separate intelligence from the individual. In effect, in the numerous books by psychologists about intelligence, the overriding concern seems to be how to measure an individual's intelligent responses and use of data. During the last century an extraordinary amount of ingenuity has been spent on ways of measuring intelligence and much less on understanding what intelligence actually is.

One of the most puzzling aspects of life for modern humanity is the human mind. Modern philosophers and psychologists have many theories about what constitutes the human mind. The trend in our age of materialism is to regard mental and/or spiritual capacities of human beings as products of bodily functions influenced by environmental factors. It seems impossible for many researchers who are grounded in

the prevalent worldview to consider an approach to the human mind, and therefore to human intelligence, which is not based on the body, particularly the brain. Robert Sternberg in his *Metaphors of Mind* gives an excellent overview of today's theories of intelligence.[31] Seven different theories are described in detail: the geographic, the computational, the biological, the epistemological, the anthropological, the sociological and the systems standpoints. One cannot help but notice that in nearly every theory an extraordinary amount of care is given to details, but the overriding principles are not as clear as they could be, at least not to a layman. The question of what the essence of intelligence actually is remains open. Not only do these theories endeavor to explain cognitive functioning, but they also seek ways and means to codify and measure human cognitive capacities. The pervading view of most of these researchers is that the human mind is to be regarded as a mechanism, and is therefore subject to statistical measurements.

I would not like to offer here a definition of intelligence. I would rather present a picture of intelligent behavior, which may be found in numerous life situations, such as when quick action prevents accidents; when quick repartee shows wit; when an immediate *holographic* image of a situation imparts convincing understanding and knowledge of all its implications; and when a sudden sense of danger alerts one to take caution. All of these instances show an individual expressing presence of mind.

Not all intelligent action and understanding is lightning quick and immediate. At times slow, plodding and persevering application must be used before understanding and knowledge can come about. In such application and endeavor the continuation of effort that doggedly follows a line of inquiry will eventually yield results. In short, intelligence has a great deal to do with an intensity of application, be it as a reaction to an external event or to something that stirs our interest from within the self. It has to do with the essence of the self more than with anything external. In intelligent behavior, in action as well as in

thought, we reveal our own essence to all who are able to perceive our actions and thoughts. The conclusion we must come to is that a great deal of applied energy, we may call it volitional energy or will, is active in both thought and action.

In Steiner's view, the brain is an instrument for the mind, not the originator of mental and cognitive activities. The mind has its seat, as it were, in a non-material locus from where it directs and manipulates the physical bodily functions, and thus also brain activity. Mind pre-dates matter, not the other way round. Steiner also posits that each human being had a purely spiritual pre-existence that prepared the present life and thus also the peculiarities of the body. He does not deny the influence or the mechanics of heredity, but regards it as one half of what expresses itself in each unique individual. Accordingly, the process of growing up and maturing through life is one of gradual integration of the physical givens with the spiritual potential. The developmental phases from birth through life are stages of this integration process.

Intelligence seems to be the way that the spiritual essence makes use of the physical givens, the physical body and its potential. In looking at the physical body of the human being, as we have already discussed above, its three major parts of head, trunk and limbs are apparent, which also relate to the three major mental capacities of cognitive, emotional and volitional activities. We may experience in each of these major parts the intelligent working of the self in respect to thinking and understanding, to intelligent action and mastery of emotion and feeling. In other words, intelligence relates to more than just the cognitive capacities, as we experience in daily life.

If as teachers we are concerned with the awakening of intelligence in our students in all regions of the human mind, it is apparent that the cognitive, the volitional, and the emotional all need to be awakened. Much of this will occur if we follow the approaches outlined above. When allowing lessons to speak to all three elements of the human soul,

we thus awaken the participation of the essential self of each student. However, this does not answer the question of what intelligence actually is.

Nature—the Prototype of Human Intelligence

Where can we experience extraordinary intelligence, perhaps better named wisdom? In the world of nature. Whenever we study the astonishing way that both animals and plants fit into their ecological systems, we must stand in awe of the wise ordering of the natural world. The natural scientists discover every year, every month, every day the intricate relationships that plants have with insects, that animals have with plants, and so forth. This wonder of nature also extends to the human body, which is most wisely organized (unless interfered with by human beings). Much of what we can experience in detail of this wise organization of the natural world allows us to glimpse an order of intelligence that goes far beyond that of human minds. It does happen that human minds devise ways to *improve* the natural way with the best of intentions, but with unforeseen consequences, for example the increasing resistance of bacteria to certain drugs or remedies. We will not discuss here whether this is the kind of arrogance that comes before the fall. There are countless examples of interference with the natural order that cause much destruction, for instance in the mechanized dragnet fishing industry. As genetic manipulation of plant material is relatively new, one might suspect that its consequences may yet take decades to become apparent.

The intelligence, or wisdom, apparent in the world of nature is comprehensive to such an extent that all consequences of the working of its parts seem to perfectly fit together. Human intelligence is not capable of this level of all-encompassing knowledge. An extraordinary naturalist, Lyall Watson, makes this comment in the preview of his remarkable book *Lifetide, the Biology of the Unconscious:*

> *This is not a time for certainty. We seem in recent years to have grown through the confident adolescence of science into a philosophical maturity, prepared not only to admit our ignorance, but to come to terms with the fact that there are some things we can never know. Armed only with the Principle of Uncertainty and a host of hidden variables, we seem to be better equipped than ever before to break through some of the misty fringes on the edge of the unknown. Not in search of knowledge, for we can now see that was a kind of conceit, but in the humble hope of more clearly defining our area of understanding.*
>
> *We are beginning to feel involved. To experience the universe and our participation in it as one dynamic, inseparable whole; an organism, ever moving and alive; spiritual and material all at the same time.*[32]

Watson steps boldly onto the threshold of exploring the amazing facts of nature, particularly the hidden connections between the living creatures of the planet and their wise interactions, giving numerous examples. Although he asserts, along with the scientists of our age, that there are limits of knowledge (which Steiner refutes), he acknowledges that the human mind is too limited in scope to fully understand the mind of the creator spirits. The discerning reader reading his books is led to acknowledgment of the web of nature, the interconnectedness of all things of the natural world, including humanity, and a feeling of awe at touching the web of life and being.

So if we are looking for the prototype of intelligence in the world around us, we may find it in the wise ordering of nature. It is the interconnectedness of all living beings that is the prototype of human intelligence. Truly, one of the most mysterious facets of the human mind is the capacity to make connections between different facts, data, events, and so forth. But who is the overriding intelligence that can encompass the totality of the natural world?

How Are the Human Being and the Cosmos Related as Spiritual Fact?

The relation and connection between the cosmos, often termed macrocosm or great world, and the human being, often termed microcosm or small world, are found in the discussions of philosophers and sages of past millennia. Steiner, too, discusses this connection in infinite variations and instances, both in general terms as well as in specific examples. From the beginning of his activity, in his presentations of the interactions of Cosmos and Humanity, he describes the coming about of the web of nature, the actions of spiritual entities, beings of superior consciousness compared to human beings, their role in space and time, as well as their future perspectives of human development. There is really no area of human endeavor where Steiner omits relating the spiritual with the physical and material. During the many years of his writing and lecturing, he continuously drew connections between the material and the spiritual world, and, practical man that he was, gave ample details and examples.

When speaking of life after death and before birth, Steiner develops a broad picture of the changing experiences and times a human soul spends in an entirely different form of being than when housed in a human body of flesh and blood. On one occasion he describes the human desire for the acquisition of knowledge:

> *The acquisition of knowledge presupposes spiritual effort. Nature—that is to say external reality—does not of itself pass on to us the wisdom and the laws inherent in it; we have to acquire knowledge of this wisdom and these laws for ourselves. All human striving after knowledge consists, after all, in actively acquiring, from experiences passively received, the wisdom and the law inherent in things.*[33]

Steiner continues then to develop the picture of what human beings have to do when in the spiritual world, where conditions of existence

are quite different. He speaks of the second part of an individual's dwelling in spiritual realms and discusses one particular task that each individual has to fulfill in preparation for her or his future earth life:

> *The astonishing thing is that in the spiritual world man does not go in want of wisdom. A man may be a fool in the material world, and yet wisdom will stream into him in all its reality when he passes into the spiritual world. Wisdom, which in the physical world we acquire by effort, being compelled to labor for it day after day if we wish to possess it, we have in the spiritual world just as we have nature around us in the physical world. It is always there, and it is there in the greatest abundance…but in respect of this wisdom on the spiritual plane we have a definite task to fulfill.*[34]

We have the task to begin exercising our will. As Steiner relates the tasks that an individual has to accomplish after death, while her or his mental faculties of cognition fade away over the months and years following death, our feeling and will—our emotional and volitional capacities—are enhanced and carry us further in the spiritual world. This task,

> *we cannot do if we are not able in that world to exercise our will—that is our feeling-permeated will, our will-permeated feeling—in such a way that we continually diminish, take something away from the wisdom which there comes towards us. Here, on the physical plane, we have to become constantly wiser; there, we have to endeavor so to exercise our will and our feeling that we take more and more away from the wisdom, that we darken it. For the less we are able to take away from it, the less are we able to find and fill ourselves with the forces we need if we are to approach Ideal Humanity.*[35]

Steiner paints the picture of an ideal human being which dominates the cosmic vision as seen from the other side, as seen from the spirit, by both human and purely spiritual beings as a great ideal, a great temple for which to strive so that it may become manifest. This *Ideal Humanity* is the human form, the physical details and the wonders of the human

body as developed over eons by the spiritual fathers of human beings, the great hierarchical beings, over vast spaces of time.

> *This approach has to be made by our taking more and more away from the wisdom. What we thus take away we can transform within ourselves, so that the transformed wisdom becomes the life-forces which impel us towards Ideal Humanity. We have to acquire these life-forces during the period between death and a new birth.*[36]

What are these life forces? They are the complex web of life-sustaining processes, the ether body. If we were not able to compress wisdom with the energy and direction of our will as it exists in the realms of spirit, we would not be able to have a viable physical body permeated by life, health, growth and so forth. Conversely, Steiner remarks in many of his lectures for educators that it is deleterious for children to be asked to strain their memory and cognitive potential before the ether body, begins its individualizing process around the age of seven, to be concluded around puberty.

During the gradual descent from the midpoint of a human being's sojourn in spiritual worlds and dimensions, we pass through, by and by, what Steiner and many predecessors of a spiritual worldview have called the spheres of the planets. Humanity as a whole is inseparably connected to our planetary system. This was a recognized fact in all ancient cultures and gave rise to the ancient astrology which denoted the particular connection of aspects of the human character with the heavenly bodies of our solar system. The Renaissance and the Elizabethan worldviews depicted the ascent of human souls after death and their descent, through these planetary spheres, to a new life.

Just as a child has to become accustomed to the different conditions of earth existence inside a human body, so human beings after death have to become used to the demands of the spiritual world. During the first part of life after death human souls learn to gradually set aside, discard and transform all that was connected to a material existence. During the second part human souls prepare for their next incarnation.

During the first part, while ascending the planetary spheres, our consciousness widens to eventually encompass the whole solar system, which we do not experience in a physical-material way, but in terms of the spirit beings active there. During the second part we pass these planetary spheres again, but now with a different task, namely the task described by Steiner. In accordance with the experiences in spiritual worlds Sun and Moon are counted together with the five major planets as providing the necessary qualities to human souls (not including those at the outskirts of the solar system, Uranus, Neptune and Pluto).

In short, when considering the cosmic dimension of human life we begin to see human intelligence as laid down in the nexus of human life forces by cosmic events crystallized by our own human will, and then freed from its crystal grave to be resurrected through individual will from its sleep in the human body, to become available to the human spirit for human deeds and understanding. Intelligence and life are thus shown to be reciprocal forces over time.

At the time of death we put our own intellect to sleep; we strengthen our will and feeling. At the time of birth we begin slowly to awaken the intelligence within us that spiritual beings have laid down.

> *When an individual comes into existence through birth he must bear within him the forces of the cosmos, and these forces must continue to work within him if he is to assume human form. Forces that build up and give shape to such forms cannot be found within the earth sphere. This must be borne in mind. Thus in what he is man bears the image of the cosmos himself, not merely that of the earth. It is a sin against the true nature of man to trace his source and origin to earthly forces, and to study only what can be observed externally in the kingdoms of the earth through natural science. Nor should we ignore the fact that everything a man receives from the earth is dominated by what he brings with him from those super-earthly spheres through which he passes between death and rebirth. Within these several spheres he becomes a servant of one or the other of the higher hierarchies.*[37]

Cosmic Life in Its Human Manifestation

When a human being prepares his body in the womb, nurtured by the life forces of the mother, and then gradually begins taking hold of life functions during the early childhood years on an individual basis, he is not yet able to deal with adult forms of knowledge. Everyone who has had the privilege to deal with young children knows that adult type of reasoning means nothing to children. However, a feelingly imaginative description may provide an explanation for questions children have. What is it that in the course of years enables children to develop the kind of mind that lives in adults, the kind of reasoning and logic of which we are so proud?

In the pages above we heard that cosmic intelligence has been laid down and crystallized into life processes in the human body. How does the reverse process take place, which will transform the configurations of life into the capacities for intelligence?

In order to understand the necessary transformation of cosmic life into individualized human knowledge we need to begin by developing a picture of these life processes, for it is they that are transformed. These human life processes as described by Steiner are not processes of separate human organs, but processes directed towards a particular goal that energize the activity of a number of different organs. Each life process may be described in terms of its goals, and also in the gestalt of its functioning. Life surges through the human being continuously. At the ocean we may observe individual waves that form, crest, break, dissolve, and in a slightly different form, rise again. Similarly, each life process forms a wave of life that surges through the body towards fulfilling a particular goal, and uniting many different organ processes along its activity, just as each wave unites many drops of water to form it characteristic gestalt.

These life processes are, in sequence from the simplest to the most complex: breathing, warming, nourishing, secreting, maintaining, growing and reproducing.[38] Steiner describes these seven characteristic

life forces, which function sequentially in time and locally in space, as part of the general matrix of life permeating and surrounding each human being. Each life force is not confined to a particular organ or organ complex in the human physical body, but encompasses several. He delineates them[39] by showing the beginning function of these life forces from birth onward. (The fetus is supported by the mother's life forces.) He is particularly interested in demonstrating that in each human being a cosmos of forces interacts to furnish the child with the capacities needed to sustain life.

Breathing begins as an independent activity at birth. Each human being throughout life inhales one breath at a time drawn from the immensity of the air mantle of the whole earth. We separate out one gulp of air. The underlying gestalt, or gesture of this action is a focus on one minuscule portion of air, which we inhale and change in its chemical constituents, before returning it again to the ocean of air. This is a continuous process, which may be modified when exerting ourselves physically or emotionally. Under *normal* circumstances human beings take about four breaths per minute, and fill their lungs to capacity. One person's lung capacity in relationship to the available air in the atmosphere is minute. Of course, in a closed and crowded room one soon feels that no fresh air is available! A pictorial analogy of the action profile might be to compare our intake of breath to grasping a handful of air, holding it in, and then giving it away again!

Breathing

Profile of Breathing: The repeated and continuous action of separating one small lungful from the ocean of air with each breath.

Warming also begins at birth when the mother's body no longer shelters the

child. What is the phenomenon of the warming process? It is making a comparison to the external temperature, which may demand an adjustment. The contrast between internal and external temperature is made conscious to the body, if not the mind, and a reaction takes place. The body as a whole, or only in one part, experiences itself in relation to its environment in the matter of temperature and demands adjustments to equalize the contrast.

Warming

Profile of Warming: The continuous comparing of internal with external temperature, which demands either an automatic body reaction to equalize the condition, or sends warning signals to our consciousness to *do something about it*.

Nourishing again is a life process with many dimensions and much activity in many organs. A vast transformation has to take place as foodstuffs are broken down, through the action of a great variety of enzymes and agents in different parts of the digestive tract, and eventually rendered into a form that the body can absorb, so that they become life-sustaining nutrition. The time element becomes an important factor because different kinds of foods follow different timelines of digestion; the spatial element, too, because different foodstuffs are worked over in different locations of the body. We are disregarding here the possibility of metabolic problems in individuals. Steiner often indicates that in effect it is the forces rather than the substances of the foodstuffs that are taken in by the human body.[40]

Profile of Nourishing: Each bite in the mouth is analyzed through a series of processes in different organs and broken down into its *physical and spiritual building blocks*, and then assimilated and directed to the part of the body that requires the freed nutrients. Priorities of sequence and location are determined.

Nourishing

The above three life processes all deal with a bodily reaction of taking into the body a portion of the external world—air, warmth or food. The next four life processes deal with the functioning of the body internally.

Secreting is the most complex of all life processes because it affects every part of the human body while maintaining the health of the whole. Within our skin are many glands and organs that secrete substances and fluids—enzymes and hormones—that are needed to carry out a variety of different functions for sustaining the health of the human organism. Thus a balance has to be maintained between the parts and the whole. Problems arise in health when this balance is disturbed, when the individual elements act, as it were, not in harmony, producing too much or too little of a respective substance, or if the *oversight* of the secreting process is not strong enough to assert the needed balance and harmony for the overall health of the body. In absorption and elimination of foodstuffs we also deal with the process of secretion. In our conscious mind we are completely unaware of the balancing activity within our body that must take place for our health. One could also describe the secreting

process as one that straddles the divide between body and mind, or body on the one hand and soul and spirit on the other.

But the awareness of the whole is present in this process, if only in an instinctual form. It is the ether body, the nexus of life forces in their totality, that carries this consciousness of the whole.

Profile of Secreting: The maintenance of a balance and harmony of the different parts and elements so that their activity supports the whole. This balance concerns not only the body, but also mental and emotional capacities.

Secreting

Maintaining is the fifth life process. It is sometimes named *sustaining*. Through its activity the body is able to repair itself when minor, and in some cases major, disturbances occur, like when a limb is broken. Everything that needs to be done within the body to maintain the status quo depends on this process. Just as with the life process of secreting, also an instinctual awareness of the totality to be maintained has to exist within the organism. Some biologists have proposed a morphological memory, or how else are we to assume that mice give birth to mice and not elephants —disregarding for the moment genetic codes, which, apparently, do not determine the body forms of living organisms. Rupert Sheldrake's hypothesis raises many questions regarding morphogenesis, or an external pool of memory of form for all life forms on earth,[41] questions which are in contrast to the predominant Darwinian view of life.

If we are injured, the body is able to *repair* and *heal* the injury most of the time (often with the help of medication and care), as it seems to have an inborn knowledge for what constitutes the appropriate form

and substance in our bones, muscles and organs. In some of the lower animals a whole body part may be re-generated after it is cut off, for instance the tails of some lizards. In human beings this healing and maintaining process is less dramatic, but nevertheless it constitutes a vital aspect of our capacities. Being healed means being made whole again.

Profile of Maintaining/Sustaining: The maintenance of status quo on the basis of a precise and detailed, if instinctual, knowledge of the body as a whole. Physicians and healers participate in strengthening the extraordinary powers of recuperation inherent in a properly functioning life process of maintaining.

Maintaining

Growing is the sixth life process. Growing means to stretch in space beyond the present boundaries, as well as to shape and perfect more detailed formations in the organs, for instance the convolutions of the brain. The inborn awareness of the whole body is required for growth to take place even more so than in secreting and maintaining. There are, however, two considerations. When a child grows, in the well-known spurts of either adding height or filling out, the body does not only maintain what is already in physical existence, but expands it. This expansion means that there not only exists an inherent realization of the present form and substance, but a knowing of how it must develop into the future. In other words, the future is increasingly made visible and manifest in the present as a child grows into an adolescent and then into an adult, both physically and mentally, in strength and

capacity. In the life process of growing an active but hidden vision of the future is contained and made visible step by step. Growing is becoming. From the situation of the present, growing realizes the future. There is subliminal logic in the life force of growing.

Profile of Growing: Growing stretches logically from the present into the future, to expand step by step in inherent alignment with its future complete form. It is quite astonishing to realize the stupendous capacity that lies in that life force: An innate and implicit awareness of the future wholeness must be present for growth to take place.

Growing

Reproducing is the final and seventh life process. One might call it the crown of life processes in that it enables the human body to bring forth its equal. It is the most revered, extraordinary and mysterious possibility for a human being to bring forth the physical body of another. What must live in the life processes of mother and father to start the slow development of another human form! It is as if an image of the future child beckons the life forces of the parents to begin working towards building her or his physical body and the foundations of her or his life body—this new nexus of life forces. The future seems to determine what happens in the present almost entirely. A dramatic shift takes place with this seventh life force from the given to the potential, from the past and present to the future.[42]

The characteristic profile of this process of creation seems the polar opposite to breathing. There, the mother ocean of air gives an infinitesimal part to a new human being; here, an infinitesimal part of two human beings unites to form a seed point for a new member of humanity. This is an extraordinary contrast between the first life

process which begins with the worldwide mantle of air around the earth and one small gulp of it, and the seventh life process which begins with a minute joining of cells and brings forth a member of worldwide humanity. The external and physical beginnings of this life process are small; the emotion behind it is often as wide as the world. The potential of each human being born is that she or he may make a difference to the whole of humanity. Thomas J. Weihs gives a remarkable depiction of embryology in his book *Embryogenesis.*[43]

Profile of Reproduction: A tiny point, a part, becomes the center of complex and integrated activity, incorporating the activities of all the life processes into the forming of a new whole.

Reproducing

The above tells us what spiritual beings have imbedded in the human ether body, as it draws together cosmic wisdom to become earthly life. The seven life processes enable human beings to assert their bodily existence to the best of their ability, withstand life-threatening situations as their destiny permits, and make use of the temple of the body as the house of each individual's spirit, so that the spirit may create and fulfill its task.

The Transformation of Cosmic Life into Human Intelligence

What is the course of action which allows the gifts of the life processes to become the foundation for intelligent capacities? Steiner repeatedly mentions that teachers should not demand cognitive activity from their students before the age of seven because the human

body needs the full energy of the life or ether forces as the basis for its health. After the age of seven a part of the life body, or life forces, becomes available for soul activities of a purely mental mode.

> *Recently I have been stressing the manner in which the organizing principle in the physical body emerges with the change of teeth, becomes emancipated at this time, and in the main constitutes the intelligence. That is one way to describe the process. Another way is one I formerly employed, collecting material for the understanding of man from a different angle: by stating that the ether body is born with the change of teeth. The physical body is, or course, born at birth, but the ether body, or formative force body, can also be called the emancipation of the intelligence from the physical body: it is merely a two-way description of the same phenomenon.*
>
> *What takes place next? Into that which becomes free—call it formative force body or intelligence, as you will—there streams the ego [the self] which had already descended at birth, and which gradually integrates it. At this period, therefore, an intermingling takes place between the eternal ego and the emancipated intelligence, or nascent ether body.*[44]

Steiner calls the ether forces also the body of formative forces because they give form to all processes of life in the body.

> *Thus from birth to puberty—that is, to the end of the grade school period and even beyond—we have a continuous entrenching of the ego in the entire human organization. After the seventh year the ego entrenches itself only in the ether body, whereas previously, while the human being was still an imitator—indeed due precisely to this imitative activity—it entrenched itself in the physical body. And later, after puberty, it establishes itself in the astral body. What we have, then, is a continuous permeation of the human organization by the ego.*[45]

While Steiner never, to the best of my knowledge, brought the life processes into direct relationship with the permeation of the self

in the course of growing up, it would make a great deal of sense to connect each life process with the emerging intelligence, which is the transformed pre-earthly wisdom on its way to becoming human and individualized intelligence. Steiner points to the artistic methods needed to help along this transformation of life forces into intellectual capacities in children. What is the process by which this transformation can take place?

Principles of form permeate the carrier of cosmic wisdom, as we can observe amply in nature. Form indicates not only a finite physical form model, but also the gestalt of the process, a typical and characteristic gesture. We are able to recognize the form principles of, say, ocean waves as typical for water, or the form principles of flames as typical for fire. In like ways we may recognize the form principles of each life process as a gestalt, however not yet manifest in the physical. Such a typical gestalt is taken over by the emerging intellectual and cognitive capacities of children after the age of seven.

As each life process establishes itself and is permeated by the incarnating spiritual essence, the self, of an individual, this essence takes over the gestalt of each life process and uses it as a model for a purely mental gestalt of functioning. In each year of life between seven and fourteen, a new gestalt is learned and practiced, so that by puberty most individuals will have assimilated the form principles of each life process and are able to use freely the corresponding mental processes that endow the individual with rationality.

I have observed students for many years and have seen the correspondence of each life process with a mental capacity as it becomes available to students in the course of the grade school years. I have seen how this process of imitating the gestalt of each life process in the mind is supported by the subject matter as laid out in the Waldorf school curriculum. The mind of the child becomes able to lift the typical formation of each life process from its former activity as a physical manifestation into the purely mental framework.

The knowledge of these stages of transformation enables a teacher to deliberately and with insight develop the necessary learning activities to ensure her or his students' growing intellectual capacities. Each learning activity will consist of emotional, volitional and cognitive appeal and will sustain intellectual growth in all students.

Correspondence of Life Processes to Stages of Rational Development

At this point, let us look at the gesture of each life process and the corresponding intellectual ability that is imitated, which must become a purely mental habit to serve as the basis for rational, logical and cognitive capacities. This transforming process takes place over years and can be greatly enhanced if the teacher chooses appropriate learning activities.

Focusing

Breathing physically becomes focusing mentally. Just as the body inhales one breath of air out of a vast potential, so the senses must learn to focus on one element at a time, one form, one sound, one letter, or one gesture. The observation capacities of seven year olds need to be honed to consciously focus the senses on one item at a time. This constitutes the main learning charge for first grade teachers. Of course, a number of different subjects present the possibility of sharpening the observation capacity of students. *Focusing is the mental capacity that corresponds to breathing.*

Warming physically becomes comparing mentally. As the body compares its own temperature to the outside temperature

and makes adjustments, either automatically or via conscious decision, so mentally we are able to compare objects and their characteristics. We need to be able to make clear observations of these items, relating to form, color, sound, and so forth, and then list the comparisons. This is a purely mental capacity and practiced in all subjects of a Waldorf second grade. *Comparing is the mental capacity that corresponds to warming.*

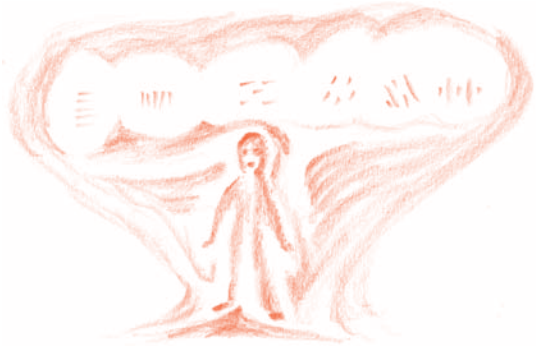
Comparing

Nourishing physically corresponds to prioritizing mentally. The nourishing process assigns each food element a timeline and a body location to be transformed, absorbed, eliminated, and so forth. When making lists of comparable items, we need to be able to list items according to prime or subordinate importance, time or space—that is we need to order each list according to priorities. This is a much more complex mental process than simple comparison and plays a vital part in Waldorf third grade activities. *Prioritizing is the mental capacity that corresponds to nourishing.*

Prioritizing

Secreting physically becomes the capacity to hold in balance the demands of the whole versus each part. The body as a whole is fine-tuned by the activity of secreting, which balances out the different enzymes, hormones and glandular secretions that work in a variety of ways so that they all contribute to the health and well being of the whole organism. Mentally, one needs to be able to bear in mind a totality while focusing on each part. This is an exercise of balance so that neither the whole nor the part predominates but are perceived in mutual context. The mind has to focus on two things at once, on the prime focus and on the context representing the totality of which the part is just one item. It is a matter of being able to split one's attention in several directions, expanding not only the focusing capacity but in a particular way so as to simultaneously encompass the totality and focus on one of its elements. The curriculum of a Waldorf fourth grade amply demonstrates this working with context. *Secreting becomes the mental capacity of perceiving single elements within the context of the whole.*

Relationship of Parts to the Whole

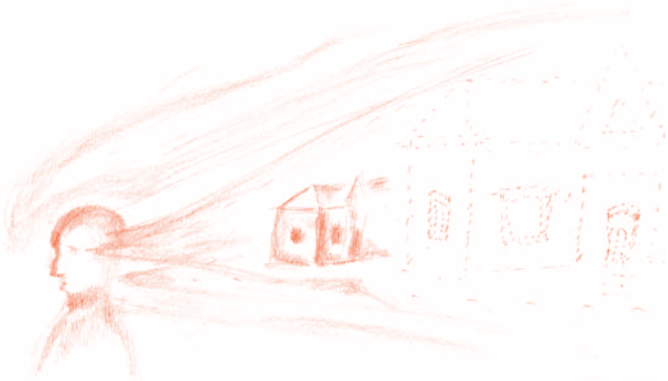


Proportionate Translating

Maintaining becomes the capacity of translating expressions from one totality to another. The up keep of a healthy body demands that the maintenance of digestion is not mixed up with the maintenance of the skin, for example. Each demands

appropriate action by the life process of maintaining. On a mental level, we must be able to know which is the appropriate form of a set of constructs, a group of concepts, and to relate them to each other appropriately. Each group of constructs has its own language of operation. We must be able to freely translate, so to speak, these languages into each other so that we may understand their relationships. In a Waldorf school, the grade five curriculum hones this mental capacity. *Maintaining becomes the mental capacity of relating and translating groups of concepts to each other.*

Growing physically is the mental equivalent of expanding and abridging concepts. While the content does not change, its form becomes either expanded in detail or abridged in formulaic format. The process of growth, of becoming, does not only concern physical expansion, but also the elimination of organs, of waning parts of the body that are no longer needed. Our future form exists already as an idea that directs our growth in childhood and adolescence in the right way. And even more specifically, growth takes place differently in different parts of the body, thus demonstrating that the overall living concept of the body is divided into sub-concepts that direct growth in different ways and different time frames. When we become older, some body functions are restricted and wane. Additionally, when we are able to discern the underlying concept behind a series of events, the relationship behind a conglomeration of objects, we may expand on it or compress it into a very concentrated form, a formula.



Expanding a Concept

Creating

An idea may be expressed in a symbol or a picture: then it is compressed and constricted in its form. An idea may be expressed in a lengthy statement: then it is expanded. The quick change from abridged to expanded formulation and vice versa is practiced in all subjects of a Waldorf sixth grade. *Growing and waning become the mental capacity of expanding or abridging an idea or concept.*

Reproducing physically is the mental equivalent of designing a comprehensive idea, or group of ideas, with all their congruent sub-sets to constitute a new contextual reality. The parts of the new creation must hang together logically, and must represent a coherent whole. It is this extraordinary capacity of the human mind that enables gifted artists, writers, composers, architects, scientists, engineers, and so forth to create new worlds out of their own minds—a truly creative effort in its most fundamental sense. Much of the seventh grade curriculum in a Waldorf school practices this new creative capacity in terms of envisioning the whole in balance with its parts. *Reproducing becomes the mental capacity of creating a new entity of being whose elements are logically related and so constitute a wholeness.*

In summary, each life process as it expresses itself in the life of the body also provides its gesture of activity, its action profile, to a corresponding mental process. When all the seven life processes have developed their mental equivalents in the course of the grade school years, then the adolescent is able to perceive and act upon the world with rationality and logic.

However, you will remind me, an adolescent does not necessarily follow the logic an adult hopes she or he would follow. Why is that so? It is because a part of our constitution, our independent and eternal essence, is not yet fully established in an adolescent's consciousness. As adults we are able to make mature judgments and follow ethical principles because our eternal self directs us to do so. An adolescent has not yet developed this eternal self to the point where it will control the mind and body fully. Consequently, as is clear to everyone who has dealt with adolescents and has attempted desperately to refute their logic, logic and rationality does not yet make them indo adults, and other considerations need to be taken into account.

As mentioned before, while I have followed these equivalents of the life processes as they emerge in the above-mentioned steps towards the development of logical reasoning, it became apparent that for most students a full year of practice of each new mental faculty had to occur before it became integrated into their mental functioning. In each subsequent year then the previously developed faculties are used. Thus, in the eighth year of this process of awakening rationality and intelligence around the age of fourteen, the assumption of a teacher should be that now reasoning functions similar to that of adults. However, maturity of judgment and understanding also has emotional and volitional components, which in an adolescent have yet to develop appropriately. For this reason, in an education based on the whole human being, the development of emotion and feeling, as well as directed action and clarity of intention is as important as that of the intellect alone.

Chapter 5

Developing Intelligence in the First Three Grades— Examples from the Waldorf Curriculum

In looking at the work of the main teacher in the first grades, introductory activities are essential to develop the preparatory stages for students to gradually grow into adult ways of thinking and of intelligent performance altogether. One should realize that there are arenas of knowledge that are not abstract and intellectual, but are practical, and are realized by bodily action, or emotional relationship rather than abstract knowledge. Therefore, we must first be clear on these different types of intelligence.

Conceptual and Volitional Intelligence

> *Does it not seem as though, during the first seven years of life until the change of teeth, the child has had to make use of certain soul-forces in order to build up its body? Does the child not have to pour soul-forces into the body in order to produce the teeth? And, when this is accomplished, are these growing-forces not released to become metamorphosed into soul-forces of ideation? Are we not witnessing how the soul which, in the case of the adult, is engaged when ideas are being formed, has been at work in the formation of the teeth at an earlier age? And when this formation of the teeth, that is to say, the diverting of soul-forces, comes to an end, are these same forces not freed to become available for and effective in the general life of the soul?*[46]

Steiner reiterates the metamorphosis of life forces from being active in the growth of the physical body into providing the capacity for mental application. It is not only the forces of ideation that arise from these life forces, in the second stage of life from about seven to puberty, but the forces of will and volition also that are directed by the child, albeit unconsciously.

> *We now have a picture of the soul of man: It lives in the growing child whose intellect still lies dormant when he enters school and when he lives under the influence of the forces of dentition. At that time the will-forces are sweeping through the physical organs, gradually localizing themselves in the larynx. If one is aware of what is happening, one will arrange the time-table in such a way that the will forces which are now entering the sphere of the intellect are well supported. If the nature of the will and the intellect is understood, that is if we are able to observe how in many a child the will is gradually being localized and how it works together with the intellect which has now withdrawn into the sphere of soul and spirit, then we will know how to arrange the physical and spiritual education of the child. Only then can education be considered as an art based on the understanding of man.*[47]

While the mental capacities depend on the transformation of the life processes, the volitional powers also need to be addressed, so that the development of intelligence in the grade school years is energized and directed.

Summing up what has been described in the previous chapters, the learning activities brought by the teacher to her or his class need to follow the sequence of the key learning process. The teacher begins with a picture or image that is meaningful to a student's soul, then initiates an activity demanding observation, imagination and physical dexterity. The students practice this activity over several days in variations and finally establish the conceptual content as a basis for knowledge and conceptual awakening of intelligence. The teacher is stimulating intelligence on a number of levels by using this sequence.

Howard Gardener posits seven types of intelligence: linguistic, logical-mathematical, spatial, musical, bodily-kinesthetic, interpersonal, and intrapersonal.[48] In each case, intelligence means comprehensive and agile activity within the indicated frame of reference or arena. Intelligent action in each of these implies the ability to have a comprehensive picture—which may or may not be a conscious one—of the respective arena of intelligence and also the ability to move freely and at will within that arena, often with great speed. Such a comprehensive overview enables a person to act intelligently in a specific arena. For instance, a person who has musical intelligence will be able to transfer a heard piece of music into written notation. It is apparent that in Waldorf education, because of the learning activities carried out in the classroom, all seven forms of intelligence are enlivened and exercised. In the early grades of a Waldorf school those requiring bodily skills are emphasized, whereas towards the end of the grade school years more is demanded from the more abstract types of intelligence. Intelligence in this sense is not a *passive mechanism*, but an activity within a specific arena of knowledge.

The main task of intelligent action is to establish connections and relationships so that an interconnected body of knowledge and capacity becomes established in the mind of the child—a body of knowledge that is capable of expansion and growth, and is in no sense finite. For children to be able to grow into individualized and deliberate intelligent action in an arena of knowledge, the volition, the action pole in each child needs to be stimulated. Waldorf education aims to do just that.

Personal and Impersonal Intelligence

Compare the examples of Waldorf instruction with conventional ones! What stands out right away is that essential element: each student is engaged on a very personal level with the learning activity facilitated by the teacher.

Whenever students are engaged in bodily or movement practices, they are engaged with their whole being, because our body is closer to us than any outside abstraction. Knowledge, capacity, intelligence consequently becomes personal. The child's mind and soul become infused with individual effort and individual struggle to overcome obstacles to understanding or manual skills. It is the bodily engagement in a learning activity that integrates the physical with the mental into one coherent experience. Knowledge is gained from direct experience.

Steiner makes it very clear that in our age, when intelligence is widespread and very advanced, it must not become separated from the core of humanity in each person, but be filled with warmth and enthusiasm, with individual effort and energy. Education that nurtures the core of human individual understanding and activity in the pursuit of knowledge and capacity is truly worthy of human beings who wish to take responsibility for their own growth and advancement. We see countless examples of depersonalized intelligence at work in the world. This depersonalized intelligence threatens to rob human beings of their most precious possession—their minds. Depersonalized intelligence is manifest for instance in testing and in the attempt to determine the levels of knowledge and capacity by assigning individual grades. This attitude reduces individual human beings to the ciphers of statistics. The loss of the individualized mind that seems the most threatening phenomenon.

Minds that lie fallow, as it were, provide a vacuum that tends to be filled with a great deal of destructive ideas or impulses. In the last hundred and fifty years or so, humanity has seen an unprecedented increase in violence, in the destruction of human beings in the most pernicious manners by individuals driven to violence because they were either unwilling or unable to direct their minds into productive channels.

> *Whenever something lives in the sphere of human will which is not accessible to conscious rationality, then human beings begin to rage and give expression to manic drives. Such irrational violence will spread ever more in today's world unless the new spiritual revelation, given to humanity by the beings whom we call archai and who have risen to the rank of the creator gods, will be heard by human beings.*[49]

We have become great believers in the authoritative statements of those who have been labeled *experts*, whose opinions are often cloaked in technical terms and at times are devoid of common sense. For this reason, among many others, Waldorf education is important because it is a human-centered form of education and offers a way that social conditions in the world can be permeated by the warmth of human engagement instead of the coldness of depersonalization.

It is clear that in a Waldorf classroom each arena of intelligent action needs to be introduced to students through activity so that the pathways between single elements of knowledge become accessible and the pathways of intelligent connections can be built. For example, in the arena of language arts, in the first introduction of learning to write and read, the basic elements are the letters. Learning to integrate letters into words and words into sentences presupposes the ability to hear sentences in their totality of meaning. Each sentence contains a body of meaning; each word constitutes an element of a sentence; each letter constitutes a part of each word. To put it pictorially, each word is an object in a landscape, each sentence is a piece of the landscape, and the landscape as a whole is the whole body of meaning, the story, the content. The pathways between sentences reveal the whole story; the pathways between words reveal the meaning of sentences; the pathways between letters reveal the meaning of words. To be able to move along these pathways makes it possible for a child to develop understanding and follow the intelligent connections between the parts.

In Waldorf schools teachers begin with the wholeness of a body of meaning, that is a story, and then, step by step, analyze it to reveal its components. A whole landscape is painted, as it were, for the minds of the students. In such a process the pathways of intelligent interconnections are revealed and become conscious in the minds of students, and they learn to walk these pathways of intelligent interconnections themselves. When students write down sentences from a story, this activity demonstrates how a web of interconnections is made permeable to intelligent action, and so constitutes an important step in the awakening of intelligence in respect of language arts.

Personal intelligence is founded through the bodily involvement in learning. Impersonal intelligence is implanted by a mechanistic and semi-automatic manner. Many problems in the public school systems may have to do with rebellion against impersonal intelligence, and could be overcome if individualistic approaches were allowed, which return to students their integral and inherent humanity.

When speaking to the teachers of the first Waldorf school, Steiner used this example of the phenomenological way of thinking in regard to the basic observable facts in physics to point out a very important development in education, already apparent in his time and increasingly noticeable today.

> *What we must strive for, however, is not to form the abstract concepts of which physics is so fond today. Rather, we must penetrate through to the concepts that are really woven into the world, the objective world. Fundamentally, everything that spiritual science is striving to bring into the conceptual world, and especially what it is striving to do to foster a certain way of thinking, has as its object to bring back into human evolution thinking that is permeated with reality.*
>
> *From our examination of physical concepts we can see that something old is really dying away, for little can be done with them. And does not the fact that we can build up a new approach to the physical—even if we attempt it in such a limited way, for we can*

give only indications now—does not this fact show us that we stand today at a turning point in human evolution?

Nothing is sadder than to contemplate a future in which the way of thinking that has devastated the minds of educated people will be transmitted to people throughout the whole earth by means of the public school system. If one wishes to found schools for the people, we must be sure that there will be something to teach in them, something whose inner configuration represents an advance. We first need the science that could be taught in these new schools. People always prefer to remain superficial, considering only what is obvious… so those in movements to renew culture do not really want to strive for a renewal of our way of thinking but simply want to carry the old and decaying way to the people. This tendency is most noticeable in the physical sciences.[50]

This excerpt clarifies Steiner's view of the need for realistic, in contradistinction to abstract, experience of the world, how consideration of relatively simple physical phenomena can lead to a comprehensive understanding of the physical world, including the human being and the forces working within it. It is a new way of experiencing the world that will lead to a new way of teaching that will awaken the individualized capacity of thinking intelligently—that is connecting all threads of thought—in all areas of knowledge.

The way for the teacher in activating each student's potential in the area of intelligent application of volitional, emotional and conceptual life lies with the teacher's schooling her or his own soul life in a new way of perception, thinking and doing. As most individuals today have been educated in the usual *abstractions* instead of the *realities of experience*, we must begin by re-educating ourselves.

In the end, any serious study of Steiner's works will be a good beginning of this self-education. These pages are being written to stimulate aspiring teachers to consider such self-education. While not every teacher is in a situation allowing the freedom for creative work in the classroom as is possible in Waldorf schools, all teachers can apply some of its principles in their work with students.

Introduction to Writing and Reading in Grade 1

In order to demonstrate the stages of transformation in the mental faculties towards the emergence of logical reasoning by the age of puberty, examples from my own experience will be described here. As stated earlier, these examples are meant to be just that, and are not intended to be imitated exactly, because each teacher needs to develop her or his own way of creating the learning activities for them to become truly fruitful, and each class is unique.

The preparatory work for writing and reading in Waldorf schools is decidedly different than in other educational systems. The reasons are founded on the principles profusely described by Steiner. Learning develops out of doing, is one such principle. Bodily activity will give rise to mental capacities, as described above. The mental capacity of focusing, as it develops out of the life process of breathing, is sharpened by the learning activities of the first grade. The gesture of breathing is to separate out one small volume of air from the great widths of the atmosphere. The requirement for students in first grade is the ability to separate out one single facet of observation from the overwhelming multitude of possibilities. Mentally, the gesture of breathing needs to be performed.

> *Writing should be developed out of painting which has been led over into drawing. The child, to begin with, has no relation to abstract letters. In the earliest times mankind did not have letters, but these were gradually developed from an illustrated picture writing. If the child is introduced at once to the conventional writing he becomes prematurely senile. The child as he unfolds needs to advance from the artistic to the intellectual, from hand-work to head-work, and from painting and drawing to writing and reading.*[51]

As described above in Chapter 2, the teacher needs to decide well in advance which letters warrant a lengthy introduction. It is practical to choose pictorial images of a widely divergent meaning for letters that

are often mixed up, such as *b* and *d*: for instance the bear for the *b*, and the door for the *d*.

The first activity is begun with telling a story that contains both the bear and the door. The teacher may invent it for just such a purpose or it may be a traditional tale. In telling the story emphatically, with lots of gestures and intonation, employing temperament work to make it as gripping and interesting as possible for the students, the teacher engages the inner picturing capacities of each student. Naturally, drawing and painting illustrations of the story emphasize the bear and the door. While learning the forms of the letters *b* and *d*, the sound of each is practiced, so that in the students' minds the form and the sound belong together. In my experience it has always been better to just sound the letters instead of naming them, because in many cases, particularly with the vowel sounds, the names of letters and their sounds do not always correspond.

Energetic movement of letter forms in walking the shapes while sounding the sounds, repeatedly, with many variations, singly and in groups, successfully establishes the relationship of each letter to its sound. Students are thus able to assimilate these. Reading at this point is recognition. Soon we introduce text, possibly in the form of captions for illustrations. Text is *read*, probably to begin with by sounding it with the teacher. Some letters, as their forms and sounds are familiar, may be recognized and sounded. After a few weeks of introducing a new letter every two to three days, hearing stories about them, drawing their forms and sounding their sounds, and playing games of recognition of forms and sounds, more text is written by the teacher together with the students. It is vital that vigorous bodily movements track the forms of the letters while sounding their sounds, to connect form with sound, and enable assimilation to take place. Many different *games* sharpen the focusing capacity on sound and form. Energetic physical movement activity in these games enhances the forming of mental pathways, and thus intelligent connections. For example, after many letters have

been introduced and integrated into the students' consciousness as described above, the following activity may take place:

Teacher: Please tell me the story of the bear and the door that we heard yesterday.
Student (with help from teacher): Once upon a time a big brown bear skulked around a house in the woods. It was cold and he was sounding *br..br..brumming*. The little girl looked out the door. *Poor bear, are you hungry?* she said.
Teacher: What is the first sentence?
All students: A big brown bear skulked around a house in the woods.
Teacher: Tell me the first word.
Students: A.
Teacher: I shall write it down now (does so). What are the next words?
Students: Big, brown, bear.
Teacher: Sound me the first word.
Students: B-i-g, big. (Teacher writes it down.)
Teacher: Sound me the next word.
Students: B-r-ow-n, brown. (Teacher writes it down.)
Teacher: Sound me the next word.
Students: B-ea-r, bear.

And so forth to the end of the sentence. The teacher will read it several times, then with the students, while pointing to each word as it is read. Students write down each word as the teacher writes it down also. The teacher warns the students that occasionally different letters are used for a word than the ones already known to the students. In this way sounding, spelling, writing and reading are integrated into one activity.

The text remains on the board for the next day. Then the class reads it together with the teacher, the teacher pointing out some words, asking individual students, and finally taking the eraser erases one word, asking: *What was the word I just erased?* In this way the visual and auditory memory of each student is strengthened, the writing is experienced as the record of an activity, and the record is released again by reading it. Writing is the encoding of speech and reading the decoding. Both need to be practiced in relation with each other. It is the relationship between writing and reading which allows intelligence to develop, in this case the mental capacity of focusing on one sound, one letter form, one sentence, one picture.

Bear and Door

Regarding vowel sounds, it is advisable to use a different way of introduction, and not link a physical object to the letter. One reason is that vowel sounds may vary markedly in pronunciation, and so students need to be prepared for this fact. I have found that introducing *angel sounds* works well, because this allows for a non-material relationship to the sounds, and the flexibility of many different vowel or vowel-consonant combinations.

Preparation for this subject at the beginning of the year includes designating how many weeks will be spent in language arts and what the goals and objectives should be, introduction of letters, which letters, which story material, then reading/imitating exercises, together with

activities, songs, rhythmical exercises, and so forth. All the while the teacher must be clear about the necessity of weaving together the sound element with the visible symbol of writing, which is then deciphered in reading.

Three weeks in advance, the teacher makes the final decision on the particulars. Three days ahead the teacher focuses inwardly on the essence of what needs to be developed in the classroom. And, of course, a nightly review of the students and a nightly preview of tomorrow's activities are necessary.

Introducing Place Value in Grade 2

In introducing place value we must introduce the ordering power of the decimal system. As adults we are so used to this order that we automatically are able to place numbers within the appropriate context. Children, however, experience numbers as simple aggregates and have not yet learned to permeate the decimal system. Of course we may already have introduced to students at the end of first grade how to write down the house of numbers, brick by brick, from 1 to 100, 150, 200 or more. Tenacious students will often want to write down all numbers from 1 to 1,000. This house of numbers is built in courses of 10. Already in first grade we have played games of rhythmical counting in tens, fives, twos. We have not yet formally begun the times tables, but made the preparations. The beginning practice of times tables in second grade is in rote recitation. Not only the times tables, but also the reverse needs to be practiced, that is the division tables. The spatial perception of times tables is shown graphically, and experienced with bodily action, by making patterns with string on a board with a ten-point circle, or the same patterns demonstrated by placing ten students into a circle and then throwing beanbags to every second, every third, every fourth individual, and so on, individual while referring to the tables. With *games* like this the visual, oral and the spatial experiences become associated.

One of the challenges a teacher has in second grade is the fact that students have outgrown the fairytale mood, and therefore no longer respond well if the teacher continues to present learning activities based on fairytale imagery. This is a very important point when choosing how to introduce place value. While fairytale imagery and language are no longer effective, the children's mind, however, is still living in the imaginative realm. It is in third grade that the students are being cast out of paradise, as it were, and begin entering the world of nature, of human work activities that are necessary for sustaining life. The activities of farming, building shelters, weaving cloth, smelting metals, fishing, and developing some basic industries introduce students in third grade in a wholesome way to the necessities of life.

In second grade, however, the imagination is still very fertile and should be used by the teacher as an intermediary tool for introducing concepts such as place value. Imagination also refers to something magical, and in second grade students still believe in magic. I have found the following scenario very effective:

> *Teacher*: Remember squirrels—they are really quite small. Now imagine a magic wolf that can swallow ten squirrels. What a big animal that is! Let's draw this: Ten squirrels in a row equal one big, fat wolf.
>
> Now, there are still bigger animals in the world. For instance, you know elephants. We know that elephants do not eat other elephants. Did you know this? However, an elephant is many times larger than a wolf. Let's say that ten wolves fit into an elephant. Let's draw this: Ten wolves equal one huge elephant.

As we draw this on the board, we immediately also draw different numbers expressed as squirrels, wolves and elephants (or any other animals that seem appropriate to the teacher). 159 would equal 1

elephant, 5 wolves and 9 squirrels. We practice for a few days drawing and expressing the appropriate numbers pictorially. In this way we have actually begun working with place value, imaginatively not abstractly.

Later in the school year we work with it abstractly and assign *places* for units, tens, hundreds, thousands instead of squirrels, wolves, elephants and whales, and now the actual location and relative placement of each number tells what it is.

Place Value Animals

We have used the animal imagery as a transition to the abstract concept of place value. This requires the teacher to realize what the imaginative orientation of each age group actually is. It is quite an important pedagogical principle that at times an indirect approach, via imagination, is most effective. We have in actuality employed the cognitive capacity of comparison when inventing the relationship of animals as the basis for place value.

In second grade, therefore, we can go with the purely imaginative proposition that the smaller animals will fit into the larger ones in the ratio of 1:10. In second grade the students themselves are in a transition from the purely magical fairytale world, via fables and stories of holy

men and women, to the more practical and down-to-earth fascination for real world situations of third grade.

Regarding preparation, on an annual basis we need to be clear on the goals and objectives for second grade in terms of the math curriculum and what the essence is of beginning to work within the inherent order of the decimal system. The sequence of introducing the different aspects of math, the means, and so forth are as important as clarifying for oneself exactly how a mental manipulation of numbers corresponds to a manipulation of objects, or counters, to demonstrate math processes. Of course, the essence of each step and the corresponding learning activity need to be revisited by the teacher several weeks in advance, then again three days in advance, and again in nightly review and preview as described above.

Imagination as a Tool of Transition

The above description of an introduction of place value reminds the discerning teacher of an important reality: the child's consciousness is changing year by year. Consequently, in order to reach students so that they can truly work with the material we need to bring, we need to pay attention to the type of consciousness of each age group.

Consciousness may be regarded as a filter between the external world and the mind, or soul, of the child. In order to reach the child, we need to *speak his language*, to clothe what we bring in the appropriate form, context, imagery, activity, and so on, according to the age of the child.

As stated above, in first grade we are dealing with the imaginative consciousness closely related to that of traditional fairytales. Each child, as it were, sees him- or herself as the prince or princess who has to overcome obstacles in order to fulfill a mission, who has helpers who miraculously help overcome these obstacles to a prize worth suffering for. In this way our students are able to understand what we want them to experience and remember.

While second graders still believe strongly in all things magical, the archetypal figures of traditional fairytales are no longer as effective, and sometimes a metaphor based on seemingly impossible and fantastic relationships and events will enable students to take hold of concepts they need to internalize, such as the place value mentioned above. After all, the consciousness of a child is not so fixed to external, physical and sense-perceptible reality as that of adults. Gradually this consciousness will begin to be tied down to what it can actually see, touch, and hear, and the magic of being will be lost. *This is of course a consequence of what adults call growing up, what in childhood we call the loss of innocence.*

It is interesting to note that a great deal of so-called *science and fantasy fiction* insert the magic that is lost in childhood, and for which many individuals long. In many stories of that nature the magic is placed into tangible objects. Actually the belief that certain tangible objects hold power and magic goes back to very ancient times, when humanity itself made the transition from experiencing directly the soul archetypes that live in the group consciousness to a modern waking up into the objects of the external world. The creator gods of every mythology employ magic to create the worlds of nature and humanity. Mythology abounds with descriptions of magic swords, cauldrons, jewels, and the like. It should be obvious that in teaching we must be able to use the fading belief in magic to help us develop a transition from childhood to the adult world. How can adults learn to speak this magical language?

As every artist knows, whatever the art form, in order to work with the matter of the physical world we can only rearrange its bits and pieces creatively when we are able to break through its rigid order. A piece of clay is worked over to gradually yield a sculpture, or a canvas is filled with color to yield a painting. *Therefore, in order to be creatively active the old order needs to be destroyed.* This is a radical statement, but some introspection will reveal its truth.

The artist, however, does not dwell on the destruction of the old order, but on the rearranging of the material bits and pieces into a new

order. In the grand panorama of history, wars, disasters, famine and plague have the same effect—the old is destroyed so that the new may come about.

When developing fantasy as an in-between stage towards too speedy conceptualization, we need to marshal the inherent capacity of children to enjoy tales of human make-believe and divine spiritual truth, not the world of rigid external fact. *We must be very clear, however, that this transition should be brief, and that we should not get stuck in terminology, but lead from fantasy terms into adult terms as soon as feasible.*

We may be reminded here of the extraordinary exposition of human essence over the compulsions of nature and reason described by Schiller in *Letters on the Aesthetic Education of Man*. Schiller describes what he experiences as the only arena of freedom a human being has, the arena of play.

> *The sense impulse excludes from its subject all spontaneity and freedom, the form impulse excludes all dependence, all passivity. But exclusion of freedom is physical, while exclusion of passivity is moral, necessity. Both impulses therefore compel the mind, the former through laws of Nature, the latter through laws of Reason. So the play impulse, in which both combine to function, will compel the mind at once morally and physically; it will therefore, since it annuls all mere chance, annul all compulsion also, and set man free both physically and morally.*[52]

If we playfully re-arrange sensory phenomena and experiences, as in the fantasy-based introduction to place value for second graders, then the free space that is created in the mind of the child allows for a new form principle, in this case the principle of the decimal system. Fantasy as a transitional experience from one set of facts to another set of facts is thus possible through the play impulse inherent in every human being.

Steiner does not encourage going back to the concepts of the classical and romantic age that Schiller represents. On the contrary,

Steiner makes it very clear that while we may admire and appreciate the greatness in the thought and mind of Schiller and Goethe, as well as many others of that age, the totally different mind set that began to assert itself in humanity in the middle of the nineteenth century demands a very different orientation, specifically the orientation of spiritual science.[53]

Grade 3: Human Needs and the World of Nature

The prevailing motif of the third grade is the stories of the Old Testament, particularly the Book of Genesis, and the subsequent adventures of humanity. Children of this age long for a definitive order in their lives, which is represented by the Old Testament God. The path from stringent order to human individualism and freedom is also reflected in the historical development of humanity. In third grade the experience of strict order gives students a sense of security. Expelled from paradise, human beings were challenged to find in the world of nature the necessities of shelter, food and clothing. From this activity the original crafts and industries of humanity can be seen to arise. In this activity there are specific sequences for a successful outcome. These sequences require the mental capacity of prioritizing.

In the third grade students are not only able to compare items with each other, but can sort through the relationships of the items to place particular emphasis on some of them in terms of space and time. How does this need for prioritizing, as well as its practice, enter into their lessons?

Most third grade teachers focus on giving students a picture of primitive housing and old-fashioned farming. However, it would be a good idea to expand the subjects to crafts and industries at hand, so that students can visit individuals and locations practicing these crafts, for instance: a mine, a commercial fishing trawler, a weaving shop, a pottery, and sheep herders and ranchers, basket makers, a blacksmith, and so forth. Or, in a modern city environment, one

might take as examples dry cleaners, hospitals, newspaper printers, bookstores, factories and so forth. In each and every case it is essential to determine what the end product is, to determine the tools needed, and the sequence of processes that lead to the end product. Nature, the godhead in disguise, and human intelligence work together here.

The mental effort of working at these old-fashioned crafts and industries is of great importance to developing the mental capacities of students around the age of nine and ten. Planning includes: envisioning the final product, assembling the necessary materials and tools, and knowing the processes for accomplishing the tasks. In each of these steps, prioritizing is practiced in some way. Moreover, the emphasis now shifts from passively focusing and then comparing the givens to actively planning an end result. Students participating in finding out about these industries and trying out some of the processes now turn toward the future, the finished product. This develops quite a different mindset, a mindset that orients the child toward an active involvement with future results, and thereby begins the student's distinct turn towards the world of adult concerns, and revealing one of the challenges of the psychological change of the ninth to tenth year.

Take housing as an example. We may discuss primitive housing which is usually a round structure covered by natural materials, such as straw huts, yurts, igloos, tipis, and so forth. They have the roundedness of a human head, poking out of the ground. In North America it has become customary to introduce stories of North American Indians for this age group in this subject. In Africa stories of African origin would be appropriate, and so forth.

More sophisticated structures arise eventually. It is appropriate to continue a simple overview of building through to a simple modern house because it is important for nine- and ten-year-olds to discover that a house is like a human being—its roof is similar to the head, its main floor like a human chest, its basement like the feet grounded in the earth, its windows like eyes, its doors like the mouth, and so

forth. If one discusses the building of a simple house, one realizes that there must be a plan; then the excavation for the foundations; then the building of the walls, which contain the conduits for all plumbing and wiring; and finally the roof. The sequence of building a house determines the prioritititizing. Students grasp quickly that one cannot build a house from the roof down. Moreover, at this age students are often fascinated by the technical terms for tools and processes used in the different crafts and industries.

To take a look at traditional farming, we again experience the world of the givens of nature to determine our priorities. The ground has to be prepared. The time has to be right for sowing. Some crops need to be thinned and weeded; others are expected to grow naturally with the sun and the rain. Harvesting and preparing the land for winter are the final efforts for the farmer to round out the growing season. The seasons of the year, time and the sun, determine what is possible in different lands. Thus apart from old-fashioned farming practices and tools, also traditional festivities filled with the poetic-emotional content of centuries of farming enrich the students' experience of these lessons. The volitional aspect of all such lessons is in the trying out of the tools: in the case of farming cutting with old-fashioned scythes and sickles, binding sheaves, making stooks to dry on the fields before being taken to the threshing floor, where the rhythmical pounding of the flails allows the wind carry away the chaff from the precious wheat seeds. To continue on the process into milling and baking is an option.

Especially in the case of farming there exists rich content for both intellectual and conceptual development, seasoned with emotional content and permeated with practical learning of the use of primary tools. But in all these basic industries of humanity all three soul forces of conceptualization, emotion and volition are easily found, demonstrated and practiced, and in each case the prioritizing aspects become apparent to the students.

During the summer, *the preparation* could contain meditating on the difference between human experience in a world where nature provides for all human needs (paradise) and an existence based solely on human effort and intelligence. At this time the teacher should determine which crafts and industries will be discussed, and at which point that will occur in the progression of Bible stories. Again, from time to time the essential elements of each craft should be vividly imagined, and details looked up and entrusted to our own soul life to become fertilized by the cosmos and engendered by imagination, further solidified into lesson plans several weeks in advance, consolidated three days before beginning a new subject, and finally reviewed on a nightly basis. In this way the teacher is present with her or his own soul life in the creation of learning activities and in the fructifying of the students' intellectual ripening.

Chapter 6

Transitions to the Present—Grades 4 and 5

Of Wholeness in Mind and Matter

If one has worked in a Waldorf classroom one will have noted the fundamental change in outlook in most students as they begin grade four. They are more alert, more awake, and therefore have developed an important human faculty—critical perception. The mental capacity that has consolidated at this time is the faculty to keep in mind a detail while also holding consciously the whole overall picture, in other words to connect the detail with its contextual totality. This requires balancing the whole with the parts. This new faculty is one that is based on the transformation of the life process of secreting.

Within our bodies are many glands and organs that secrete substances and fluids, enzymes and hormones, that carry out a variety of different functions for sustaining the health of the human organism, demonstrating that a balance has to be maintained between the parts and the whole. The parts and the whole of the body are polarities. Problems in health arise when this balance is disturbed, when the individual elements act, as it were, not in harmony, but individualistically, producing too much or too little of a respective substance. Problems also arise if the *oversight* of the secreting process is not strong enough to assert the needed balance and harmony for the overall health of the body.

It is truly amazing to learn about the complexity of the human body in respect to its internal secretions, the enhancement of these secretions by external substances, and the huge effort the body makes to keep this *ant hill of incessant activity* in balance so that it serves the health of

the whole. While a significant number of internal secretions assist the digestive process, internal secretions also serve to enhance or subdue, as needed, the waking consciousness of the human being. Therefore one could also describe the secreting process as one that straddles the divide between body and mind, or body on the one hand, soul and spirit on the other.

In a sense we ought to ascribe a kind of awareness of the whole for the nexus of life forces apart from the daytime consciousness of a person. The picture of an ant colony may not be that far out, as each ant knows its position and work in the great scheme of things, sustaining the life of the whole ant colony. It is, of course, an instinctual knowledge in the case of ants. And *the great scheme of things does exist*, in respect of an ant colony, as well as for larger communities.

With this new mental capacity developing around the age of ten, a different set of demands is appropriate for the students. No longer a relatively straightforward case of comparison, nor simply priorities, what is new is that both the totality relating to a single facet, as well as this single facet in itself, needs to be held in the mind simultaneously. In other words a certain split in awareness, in the focus of awareness, can be made, the perception of a single item and its context.

We are active in employing our capacity as adults to be aware of both simultaneously in numerous ways while not being aware of either in full consciousness, for instance when we pick a particular noise or sound out of the general hum of traffic; when we recognize a different pattern of behavior of a single bird within a flock of birds; when we isolate a distinct pain amid a general feeling of illness; or when we focus with our eyes on one object while being aware of what happens in our peripheral vision. The respective totality is always present in the background to each item. Now, however, in order to make use of this dual awareness, our whole capacity of deliberate perception becomes sharper and acquires a new, and divided, focus.

While in ordinary daily life we are able all the time to split our awareness in the described manner, when we awaken intelligence in students this split now becomes a deliberate and conscious necessity, in terms of intellectual, volitional and emotional intelligence. We could say that we have a concept in mind while focusing on a perceptible detail. The concept of the totality enables one to be mentally aware of both the forest and the tree. Developed as a mental skill leading towards logical reasoning, and intelligence in general, however, we are very much imitating the action profile of the life process of secreting. The complexity of this life process as it orchestrates the numerous physiological events in the body to serve the well being of the whole is reflected in the capacity of holding in consciousness the detail over against the entirety.

When we are aware of an emotion towards a person, or a feeling for an object, a work or art, or the like, it is often very difficult to isolate this feeling, as our general tendency as human beings is to pour our whole self into this emotion or feeling. However, as soon as we are able to objectify it, we gain a measure of control over it, in other words, we can act as a mature person. If students learn to consider the totality of a situation, its meaning and context, instead of blindly identifying with it, then in a different way we help them to develop emotional maturity.

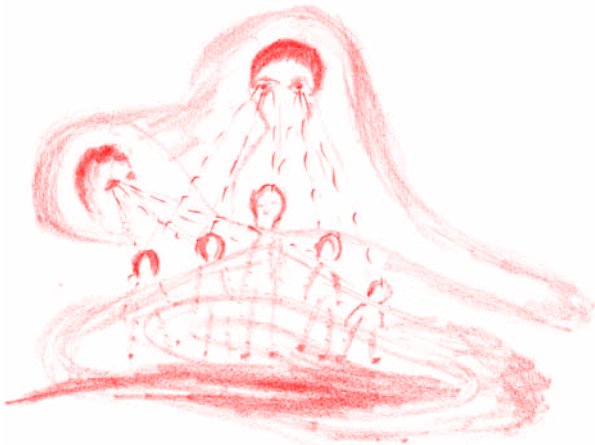
Regarding our volition and intentions, again if we consider the consequences of our actions, how they affect, for instance, a group of individuals, then a hiatus is inserted between thought and action, and deliberate action instead of emotional reaction may prevail.

In Steiner's descriptions of the phases of child development the crucial change of attitude around the tenth year is often described.[54] Waldorf educators often describe this *crisis point* as the emerging capacity to observe objectively what is around the student, which enables her or him to begin to criticize (both positively and negatively). It is only after this point of changing awareness that the natural world ought to be observed directly. For children younger than ten years

of age, all events and phenomena of nature should be expressed as imaginative pictures, because they still live largely in a mythological type of consciousness.

The capacity for criticism implies that one can separate oneself from objects viewed. This separation is both emotional as well as intellectual, however not necessarily conscious. The potential objectivity of the mind enables a person to separate him- or herself from the surrounding circumstances, and then, being separated, enables criticism, because one no longer identifies with these circumstances or group. The separation from family, class or other group is one of concept. In reality we remain both emotionally and physically a part of a group, but we can separate ourselves from it with our thinking capacity. The group, the context of our situation, does not yet allow us to rebel against it as most teenagers will a little later, when the split between consciousness of the whole and of themselves as a part leads them to also experience this split on the level of emotions and actions. The reality is that the emerging individualization of the growing human being expresses itself first in the area of conceptual life, and only later in emotional and even later in volitional impulses.

Parents and teachers are often baffled by the sudden criticism of students who were previously loving and compliant. But this change of attitude heralds a new capacity —that of objective evaluation of the world, and one's own place in it. In other words, one begins to see oneself as a part, and one's surrounding



Family Comparisons

(one's family, class, school) as the totality. Ironically, this emerging critical capacity enables one to clearly find one's place. Transitional difficulties in accepting one's surrounding as the totality to which one belongs need to be both understood, and eased, by parents and educators. These difficulties are healthy symptoms of a new capacity, and should not be suppressed, but channeled into constructive directions.

Introduction to Fractions in Grade Four

Working with fractions is often regarded by adults as one of the nightmares of their childhood school experience. Why? Because in most traditional approaches the mental flexibility that allows working with fractions has not been developed. In a Waldorf school, the following preliminary exercises might be found.

Beginning with an analysis of the times tables, one might begin with one of the *rich* numbers such as 240, and build with it a *fraction tree, descending from the pinnacle.*

240 = One whole

120 + 120 = ½ of 240 + ½ of 240

60 + 60 + 60 + 60 = ¼ of 240 + ¼ of 240 + ¼ of 240 + ¼ of 240

30+30+30+30+30+30+30+30 = ⅛ of 240 + ⅛ of 240 + ⅛ of 240 + ⅛ of 240 + ⅛ of 240 + ⅛ of 240 + ⅛ of 240 + ⅛ of 240

15+15+15+15+15+15+15+15+
15+15+15+15+15+15+15+15 = 1⁄16 of 240 + 1⁄16 of 240 + 1⁄16 of 240 + 1⁄16 of 240 + 1⁄16 of 240 … , etc.

5+5+5+5+5+5+5+5+5+5+5+5+
5+5+5+5+5+5+5+5+5+5+5+5+
5+5+5+5+5+5+5+5+5+5+5+5+
5+5+5+5+5+5+5+5+5+5+5+5 = 1/48 of 240 + 1/48 of 240 … ,etc.

3+3+3+3+3+3+3+3+3+3+
3+3+3+3+3+3+3+3+3+3+
3+3+3+3+3+3+3+3+3+3+
3+3+3+3+3+3+3+3+3+3+
3+3+3+3+3+3+3+3+3+3, etc. = 1/80 of 240 + 1/80 of 240 … , etc.

Students at this age really enjoy the expanding fraction components of such a rich number, the analysis as well as naming the fraction parts. Teachers realize that the *idea* of a fraction is not unknown to students of that age, but the *particulars* of notation and of dealing with the fractions are unknown. As fourth graders also delight in anything that is sensational, such a fraction tree, especially as the two bottom branches may be named differently, ought to cause much voluntary homework because it interests the students to find their own sensational fraction trees. The fact that we are actually working with the factors of 240, which we shall do more formally in fifth grade, should not deter us here from beginning.

Another way to experience the reality of fractions is based on the volitional. Hopefully the class size allows a large number of individuals, such as 24.[55] If one should be fortunate to have such a *perfect* number of students, one could practice the following daily for a few minutes every day. (If one does not have such a perfect number, students are quite willing to count imaginary students in order to make up the required number.)

Teacher: Please count off from the first to the last.
(The students each tell their number, 1, 2, 3, etc.)

Teacher: How many are you altogether?
Students: We are twenty-four.
Teacher: Can the first half of twenty-four stand up?
The students half rise and chant: We are twelve, we are one half of twenty-four. (All jump and clap on *one half)*.
Teacher: Can the second half of twenty-four stand up? (The other half rises andchants): We are twelve, we are one half of twenty-four.
(All jump and clap on *one half)*.
Teacher: Can the first fourth of twenty-four stand up?
Students: We are six, we are one fourth of twenty-four.
(All jump and clap on *one fourth*). And so forth.

Some different requests might be: Stand in a row; stand in a line. How many are you in the first row? How many are you in the second row? How many are you in the third row? How many are you in the fourth row? How many are you altogether? Answer: *We are twenty-four, in four rows of six each*.

In this way, using the times tables, the interconnectedness of a number as a totality and its parts as fractions is not only demonstrated but also experienced in all its possible variations. Whenever students place themselves into a spatial event, and have to move according to an overriding principle, that is in this case a totality, they feel themselves as parts of a whole, but the concept of the whole, in this case the whole class, is very close and obvious to each one.

One should remember that everything that a student does as bodily activity, especially if she or he is counted as one part of the whole, is experienced with extra intensity, as we identify ourselves so strongly with our bodies. Right from first grade, throughout the grades, we should make use of this strong identification and not use parts of the body to indicate fractions.

I have personally used these types of introductory processes before introducing writing and calculating fractions. When I subsequently introduced the formal notation, still distinguishing between numerator and denominator with color-coding, the students exhibited fewer difficulties in learning to deal with fractions.

The volitional experience in both exercises above is obvious; the emotional one comes about through the *sensation* of size; the conceptual harvest arises within a few weeks as the activity becomes absorbed and integrated into the mind. As before, the teacher's strenuous preparation in meditating on the primary concepts and their practical application is an essential factor of preparation, in the original preparation, as well in the subsequent conscious recall of one's insights in rhythmical intervals before the actual lesson begins. Of course, the nightly review and preview continues to be an essential tool of soul communication with one's students.

A year later, around the eleventh year, a further mental faculty will unfold. Based on being able to hold in mind, in balance, in contextual perspective, parts and the whole, this is the faculty to compare different parts with each other and *translate* them into each other's formats. Different contexts may now be compared with each other, different formats, different languages. For instance, this capacity enables one to find the equivalents of fractions values in the format of decimals or percentages. There are different value systems that allow comparison, and also allow translation into each other's systems. This next faculty could be named *proportionate translating.*

On the basis of a precise and detailed, if instinctual, knowledge of the body as a whole, the status quo is maintained. Proportionate translating of patterns into their equivalents is the fifth capacity to be developed on the path towards logical reasoning. It is related to the life process of maintaining. In proportionate translating, we put side by side, as it were, different self-contained systems—totalities—and relate

these to each other in the appropriate proportions. A prerequisite of this capacity is the ability to recognize concepts clearly, and then the various forms, languages or symbols representing these concepts. One could also say that each system has its own language, but these languages are capable of being cross-translated. The details of each system may be expressed in the language of another system, much as in human language per se. Each pattern represents a language. Each detail in each pattern may be translated into another pattern, if the precise table of conversion is known. For instance, I may express monetary values in different currencies if I know the conversion factors. Basically, we are dealing here with the orderly relationships between totalities, and their comparisons.

Mythology and History in Grade 5

One of the most inspiring, fascinating and demanding subjects for teachers of grade five is the transition from the mythological to the historical aspect of cultural development. The main subject matter from which language arts (grammar and creative writing) in the fourth grade is drawn from stories of Norse mythology, and in the course of the fifth grade the mythological view of the past needs to be broadened into a historical perspective confined to the personalities whose actions, emotions or concepts influenced or changed historical events. In other words, individual human beings now begin to prominently appear as agents in historical development in contradistinction to divine beings, gods, that direct the affairs of humanity in mythological experience. This is a very important transition and appropriate to the age of eleven.

The fifth mental capacity necessary towards the development of logical reasoning is proportionate translating. What we translate, convert or interpret, as it were, are details from different frameworks, different contexts. The mythologies of the ancient world present superb examples for such proportionate translating, however not in a scholarly sense, but in opening up for students of this age the fundamental

religious practices as part of ancient cultures, the feeling and emotional context of the ancient worldviews, which provide the basis for several of the world's great religions.

In comparing, for instance, the creation stories of ancient India, ancient Iran, ancient Sumer and Babylon, ancient Egypt, and ancient Greece with the stories of Genesis and the Norse peoples, while details differ, earth and cosmos were created by divine beings. And in the course of one year, fifth grade students are led from a feeling and cultural appreciation of the ancient world through to the experience of human beings as actors on the world stage. This is indeed a major shift in experience, feeling and emotion, of point of view.

In each of the events described in mythology versus historical events, context is of prime importance. In the beginning, there was chaos, and certain individual gods created order out of that chaos—in the Babylonian epics, the Egyptian canon, Zoroastrian or Greek mythology— order that resulted in a hierarchy of being and power and became the context of all subsequent actions by gods and human beings. Human beings who rebelled against the divinely created order paid a price, as for instance in the story of Gilgamesh. Gilgamesh did not accept the death of Enkidu, traveled to the far ends of the earth to find immortality for his friend, and conceded that death must be suffered by all human beings. Or Sisyphus, who dared to trick the gods for his own advantage. Or Prometheus, who presumed to give human beings the gift of fire and was made to suffer until released by Hercules. The context to all these myths is the world created by the gods, in which human beings dwell and must abide by the divine laws.

This changes in the course of history, as soon as human beings begin to shape the world and thus begin to shape the context of action. Interestingly enough, this is the time in history when individual human beings began to exercise their own capacity for individual thinking, as demonstrated by early Greek culture and philosophy.

The places in nature where the ancient gods were worshipped were special. In Chapter 2 I described spatial memory, memory based on locations where special events took place. Temples and sanctuaries were often erected in pre-historical as well as historical times at locations where events regarding gods are said to have taken place. Since very ancient times in all cultures worldwide human beings have tried to reflect the divine order on earth by erecting temples. Excellent demonstrations of this principle in relation to Egyptian temples are available in works by R.A. Schwaller de Lubicz.[56] Regarding Greek temples, it is fascinating to realize from relatively recent research that the whole geography of the Greek world was ordered by the erection of temples in special places, and that their spatial relationship was a repetition of the cosmic order based on the zodiac and the gods and heroes that ruled specific signs of the zodiac.[57] Steiner describes the birth of conscience in the Greek world.

> *Whenever a human being harms another, she or he forms particular thoughts about the committed deeds. These thoughts are infused with substantiality from the soul worlds, appear as seemingly real beings, and so plague and persecute the individual. In ancient times these beings of conscience were beheld as the hounding furies, such as described by the Greek tragedian Aeschylus about Orestes, demanding restitution of the imbalanced world order. A short time later, the Greek tragedian Euripides, also in a drama about Orestes, already described the pangs of conscience as an inner experience. Here we see historically demonstrated the precise moment in historical evolution when a soul experience becomes inward.*[58]

While a fifth grade teacher would not directly refer to the birth of conscience, the story of Orestes, who avenged the killing of his father by his mother, and so committed matricide, is of great dramatic appeal and deserves to be told as one of the sequels to a study of the Trojan War. While the great Greek tragedies are appropriate for the high school, the stories of Odysseus, Agamemnon and Iphigenia can

serve this age group well. An interesting Waldorf tradition is for the fifth grade teacher to observe who among her or his students appears to feel greater sympathy for the Greeks or for the Trojans. (Today, I would certainly also include the Egyptians or the Babylonians, and the Romans.) An affinity for these cultures might be seen as special relationships to them, and again help in a deeper understanding of individual students.

Thus the mythological tales are infused with feeling and emotion, and feed the soul life of students, especially if the epics are recited as well, and plays are performed. It is good to immerse eleven year olds' feelings in these uplifting and thought-provoking classical stories, and tell them in such a way that the students' feel strong sympathies and antipathies.[59] This middle period of the grade school demands a great deal of soul nourishment for students, and one could say that if it is neglected, then human beings will have less chance during the rest of their lives to deepen their soul life. If, on the other hand, such feeling-soul nourishment is provided, then in later life the capacity of judgment may reside not only on a personal but also on an objective basis.

Regarding history proper for this age of burgeoning awareness of oneself as an individual, students need to hear the often-dramatic actions of leading historic personalities. It is not recommended for this grade to concern oneself with social commentary or social and economic history, but to describe vividly and dramatically actual individuals and events that took place. In eighth grade, when approaching the present world situation, social upheavals of the last three hundred years may be described, but preferably still in terms of dramatic portraits of its agents rather than the abstractions of social historians. To be factual rather than theorize is important, for at this age the experience of oneself as an individual coalesces more and more. It is important for the teacher to be mindful that this coalescing and integrating process of each individual student with what is experienced and observed acts as a lens through which one sees the world. A deeply feeling experience

of the subject matter, an active experience of learning, the stirring of judgment of right and wrong at the hand of historic personalities, contribute greatly to the gradual development of context within which to place the historical details.

A History Lesson

The advice I received from one of my very first advisors when I began teaching a sixth grade in my first Waldorf teaching work, was that in fifth, sixth, seventh, and in some respects even in eighth grade, the teacher sets the scene of events in as graphic and dramatic a style as possible.

The first day: A history lesson at the end of fifth grade could take the following form. When setting the scene for the Battle of Marathon, 490 BC, one could stand in front of the class, and use large gestures, paint the setting with words, thus: Here is the bay of Marathon, with the many Persian ships rocking in the wind. We are standing with the Athenian generals, on this hill, overlooking the plain of Marathon; the generals are in disagreement, half of them regard the Persians as too dangerous and want to wait at the walls of Athens; others, Miltiades leading, see that the Persians have not yet unloaded their cavalry and are vulnerable—they want to attack now. The Persian troops are gathering on the plain. Athenians are better armed and trained; helmets and swords are glinting in the sun. Sparta has promised help, but it is late. The Athenians move swiftly to meet the Persian infantry, archers on the wings, and then advance against the Persian spearmen at the center, who break their ranks and flee. See them trying to get to the shore and make for the ships safely, running, and being killed as they run. Less than two hundred Greeks were killed in a battle that devastated thousands of Persians. Miltiades sends a runner to Athens to bring the good news of victory. Twenty-six miles to Athens, the first Marathon run. So swiftly did the messenger run that he collapsed in death after telling of the victory.

The Persians, having been regarded as invincible, were dealt a decisive blow. Greece was safe from being overrun by Oriental potentates. The gods were seen to be at the side of the Greeks, and Greek culture was preserved for a later age. The famous Greek playwright Aeschylus also fought in the battle of Marathon. We evoke the actual location, time, and personalities as vividly as possible.

The second day:

Teacher: "Boys and girls, I would like ten of you to be the Athenian generals and discuss in your war council whether to fight the Persians or not. Discuss the reasons for your viewpoint. You have five minutes to think them out. Is it better to fight now or to wait? Is it better to fight from the walls or the open plain? What other reasons can you mention? All right, go ahead." This conversation allows students to imagine themselves in the situation of Miltiades and the other generals. What does it mean to go up against an overwhelming opponent? Personal courage against the oppressor? Why resist the Persians?

A lively debate follows the improvised scene. We allow feeling-emotion to accompany our re-living of yesterday's descriptions. It is quite important that strong feeling is generated. Another topic might be the description of a Persian spearmen in contrast to a Greek hoplite.

The third day:

Teacher: "Why was this battle and its results so important? What kind of culture did the Greek city states have that would most likely have been destroyed? How did Greek democracy differ from what we call democracy today?" (This should be expressed in very general terms; modern states and their constitutions are not really discussed before seventh and eighth grades.) It is now important that reasons for actions are pointed out. The teacher might formulate the reasons explicitly, then dictate them as a conclusion to be written into the history books, whereas the students' essays might be more descriptive in content.

The proportionate translating step towards the development of logical reasoning in the history class, in contrast to mythology, becomes now a comparison of cultures and beliefs. The inner flexibility demanded of fifth graders to live themselves into the minds of Persians and Greeks, for instance, is good practice for doing the equivalent work in the math and science subjects.

When we enter the subjects of grade five, we begin to concern ourselves with time, in a much more personal way than the measuring of time in the third grade. A feeling for the passing of time in history is essential. Regarding mythology, however, there seems to exist a realm from *before* time. A subject that readily demonstrates time is botany—an annual plant shows the different phases of its growth in the course of only a year, but with conceptual thinking, the students are able to *see them together!*

Regarding preparation, with both mythology and history the first step is to actually acquire the information through reading and to penetrate the essentials by meditating on the meaning. In mythology one often encounters images that convey processes in the physical body or the soul in the guise of events between gods. It is a very good exercise towards developing imagination to penetrate mythology to the degree that one realizes which processes are thus portrayed. An inspiring example is Leo Heirman's book *Pictures of Initiation in Greek Mythology.*[60] Steiner discusses the deeper meaning of classical mythology tales throughout his work, as at his time the study of mythology was regarded as an integral part of a good education in general knowledge.

Chapter 7

Foundations for Reasoning—Grades 6, 7, and 8

A tremendous amount of harm is done to the growing being if we fail in his tenth and eleventh years to present him again and again through his feeling life with the way man is linked to external nature and is even a synthesis of this external world of nature.

But another important phase in the child's development lies between his twelfth and thirteenth years. During this period the spirit and soul elements in man are reinforced and strengthened, that is to say those spirit and soul elements that are less dependent on the ego. What in spiritual science we are accustomed to calling the astral body permeates the ether body and unites with it. Of course the astral body as an independent being is not born until puberty, but it manifests itself in a peculiar manner through the ether body by permeating and invigorating it between the twelfth and thirteenth years. Here, then, lies another important milestone in the child's development. It expresses itself in the way the child, if we treat rightly what is now in him, begins to develop an understanding for the impulses working in the eternal world that resemble impulses of spirit and soul such as those at work in the external world as the forces of history.[61]

Flexibility of the cognitive, the emotional as well as the volitional capacities needs thus to be fostered, before the actual years of puberty wreak their havoc and turn the world topsy-turvy. This flexibility of adjustment, of expression, of perception, is practiced with each subject in the Waldorf curriculum at this age. The future is imminent. Its face beckons with excitement of the growing life. It is important for the young person at the threshold of puberty to realize that not everything in her or his environment should be taken as fact, some of it may be

changed; a mood of promises for the future, instead of confirmation of the results of the past, allows the young person to tentatively begin to have the courage to set sail on the ocean of life.

A phenomenological approach to the subject matter, particularly the scientific subjects, is practiced at this age in Waldorf schools. No theories are propounded, nor is the attempt made to verify them by observing natural phenomena. Rather, beginning with the facts, the givens, the phenomena are studied, observed and described in their gestalt, and conclusions about the natural forces are based then on the pictorial metaphors which the phenomena represent. In this way a view of the world is developed which allows a *growth of understanding* to occur from the physical observation to the mental conclusion. This approach allows the adolescent to gain a personal relationship to the world of nature, because he or she is actively involved in experiencing the tension between the given fact—the starting and growing point—and the possible comprehensive picture of a force of nature—the final stage of growth, understanding.

The technical language capacity to express not a certain, but a possible, outcome, allows for the development of a feeling relationship to life. Much that the young person will encounter through life is not something that is set in stone. Relationships are not fixed throughout life. Life itself, in its extraordinary manifestations in the natural world, continually adapts, changes, and *plays with the possibilities.*

Growing Becomes Expanding and Abridging

The life process of growing provides the action profile for the newly emerging mental faculty of expanding and abridging that is needed as the penultimate step towards logical reasoning. This action profile translates from the ether or life body into the astral or consciousness configuration of an eleven- or twelve-year-old.

The mind has the ability to understand what surrounds a person in a kind of *shorthand*. This concentrated form of an event, a fact, an

observation that may be noted as a symbol, a formula, a picture, or a metaphor, may be filled out and expanded to its complete time sequence and spatial detail and described in words. We are dealing here with the capacity to abstract the essence, mark it in our consciousness in abbreviated form, and expand it again to its original length and richness on demand. The working of our memory and recall is somewhat similar. It presupposes that the concept of the essence is very clear in our minds, so that we can manipulate it at will. It also presupposes that the subsets of each concept, the related and subordinate concepts, are known. Of course our minds are very capable of expanding concepts, and at times we fall prey to their beauty and attractiveness and leave provable reality behind! Equally, we can describe a whole range of concepts and feelings with one word, one expression (for instance: Aha! in words, and a light bulb lit in a picture!).

When we are able to perceive the underlying concept behind a series of events, the relationship behind a conglomeration of objects, we may expand on it or compress it into a very concentrated form—a formula. We are able to manipulate both time and space by expanding or abridging respectively. In our bodies physically there exists a starting point, the growing point. In our mental manipulations there also must exist a starting point, a concept, an observation, a phenomenon, an action, which can be expanded in fact and in concept and abridged to its essence into a formulaic abbreviation.

This stage in the development of logical reasoning may also be described as experiencing and manipulating polarities: the contrast between the physical and the mental; the contrast between the given and that which has yet to become and grow; the natural polarities of heaven and earth, masculine and feminine, conqueror and conquered, dark and light, soft and hard, the definitive and the putative, and so forth. The means of reconciliation of the polarities might not be grasped until later, until the experiential facets of the polarities have been noted. But the tension between given facts and potential expansion

is already experienced at this stage. This also comes to expression when applying the conditional mood of verbs—this means reaching out into the unknown. The life process of growing reaches into the future by expanding from a growing point. A concept, likewise, may be expanded or abridged to symbol, metaphor, or image that contains the full concept as a potential. With language as an expression of one's innermost wishes and intentions, one should be able to do the same. When the conditional tense has been mastered, a new kind of flexibility is available.

There are pitfalls: the underlying concept may not be clear and may not be applied correctly in expanding or contracting it; the relationship between all elements, all considerations, is not clear, and, therefore, the concept may not be applied correctly. In either event a plan of action is obscure.

Astronomy—Sky and Earth

Astronomy is a new and important subject for the sixth grade. It expands the realm of two-dimensional space of geography into three dimensions. The young person is challenged to observe the heavenly phenomena—to begin with the main heavenly bodies in their apparent paths over the earth, sun and moon, daily, monthly and annually. To plot the path of the sun in each season, to understand the phases of the moon in relationship to sun and earth (and the specific latitude of the observer) are quite important factors for knowing one's location on earth. The reciprocity of noon position of sun and latitude on earth are fundamental concepts, which allowed the seafarers and adventurers of ancient and medieval times to find their way across the oceans. A very important aspect of this subject is the necessity to mentally journey to different latitudes on earth, and to experience in mind, if not in actuality, the changing angle of the midday sun in relation to one's geographic position. Climatic zones, while being able to be directly experienced when traveling over the earth, thus become a logical

reality. To grasp the logic of this reciprocity is an important step in finding one's way into the rational logic of the adult world, into which the young explorers now begin to enter. A thread of reasoning connects the initially observed fact and the logical conclusion to which it leads—an important step towards the full mastering of logic.

Body movements as a basis for experiential learning activity are still valid. As we are dealing with a phenomenological approach, we begin with what may be actually observed, and then in imagination move on to what is conjectured. Therefore, teachers could begin this new subject with the path of the sun during the day, at a specific time of the year. For simplicity's sake one could choose the equinox and solstice points. Students can keep diaries for sky observations and note the rising points and the setting points of the sun for a month or two before beginning the astronomy block. Then, individual students are asked to move across the classroom from east to west, the day's course of the sun, while indicating with their arms the height of the sun over the horizon. After doing this for a few days, we then discuss the four turning points of the year, solstices and equinoxes, and have students move across the room for each, also indicating the position of the sun, particularly the noon position. We are already dealing with imaginary positions, but they can be experienced at the location of the school in the course of the year. Then we need to change latitudes. We could do this in the following way, with the teacher demonstrating and the students in turn imitating:

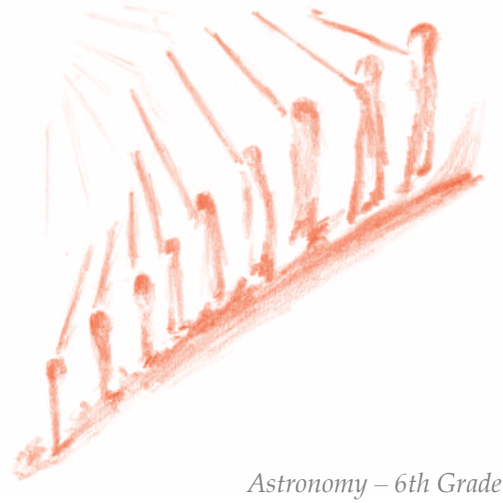
Teacher: I am standing at the North Pole (or reasonably close to it). It is June 21st. I follow the sun's path with my hands (*she or he moves arms about 30 degrees from the horizon in a circle*). I am standing at the North Pole. It is September 23rd. I follow the sun's path with my arms (*she or he moves arms in a circle around the horizon*). I am standing at the North Pole. I follow the sun's path with my arms. It is December 21st (*she or he moves arms in a circle about 30 degrees below the horizon*). I am standing

at the North Pole. It is March 21st. I follow the sun's path with my arms (*she or he moves arms in a circle around the horizon*).

Now we enact these pictures for other latitudes—for instance the Arctic Circle, our own latitude, the tropic, the equator, and move onto the Southern Hemisphere. All along the students have also done what the teacher has done, in groups or singly.

In the end, we should have nine students in a line, each one in a position for each of nine latitudes, poles, Equator, Arctic Circles, Tropics, our own latitudes north and south, and move the apparent noon position of the sun on the four turning points of the year. In this way a feeling is awakened for the sense-apparent dance that the sun makes around the earth in space and time.

Of course, drawing and describing this in books is another challenge. The conceptual conclusions about the interaction of earth and sun are essential. If we then introduce actually measuring the angles from the horizon and from the zenith, we begin to apply measurements to the heavens and to the earth. We might add the elevation of the Polar Star, which, curiously enough, shows the same elevation as the latitude of the location where we are.



Astronomy – 6th Grade

It is noteworthy that in grade six we also introduce students to basic geometry, so that both earthly and heavenly relationships may be expressed in spatial terms.

It is good to add the path of the moon, nightly, monthly, yearly—again with as much movement activity as possible. With the moon it is good to make certain that trick questions can be answered correctly,

such as, "I am looking south at midnight. I see a half moon, curved to the east. What phase of the moon is it?" or "I am looking east at sunset. I see the moon rising. What phase of the moon is it?" Too often one finds in literature descriptions of the moon that are impossible, for instance the full moon setting in the west in the evening (it will set in the west at sunrise). It might be fitting to describe that on the equator one does not see the man in the moon, but the rabbit! If one has the time, an introduction to the circumpolar star constellations and the zodiac should be done. The coming about of eclipses, and the reasons for them, might wait till seventh grade.

Astronomy is such an important subject because students at this age need to learn to use conjecture to venture into the unknown, but in a lawful way. This mental effort—to conclude from the known to the unknown logically strengthens the ability to move from the small to the large, from the big picture to the formulaic abbreviation. Thus the penultimate step towards logical reasoning is experienced bodily and emotionally and accompanied by thinking. A similar process is encouraged with the first classes in geometry.

Preparing for an astronomy block is a difficult task for many teachers, as the actual knowledge of astronomy is not taught at present in a practical and observational way, but through abstractions. One has to picture the relationships of the heavenly bodies to each other, at least within the solar system. Intensive acquisition of facts needs to precede forming imaginative pictures for introducing this difficult subject to twelve-year old students. However, arduous mental preparation will, with enough effort, and allowing enough time between the teacher's preparation and the beginning of the lessons, yield an imaginative approach.[62]

Reproducing and Comprehending a New Whole

Beginning with a concept or idea and creating a new entity is the seventh and final step towards logical reasoning. It is the equivalent of

the life force of reproducing. Just as in the latter the image of a future human being, the parents often being unaware of this image, beckons the life forces of the parents in the creation of a child, so inherent in a concept is the potential for its realization and eventual physical manifestation. Of course, in the case of reproducing, the future human being is not only present in a generalized form, a purely abstract form, but as a spiritual entity from the moment of conception that directs, as it were, the creation of that body that will serve it in future. It may be appropriate to begin using the term *idea* here, as this term implies a combination of image and concept.

From the first step of focusing we may observe two strands in the development of logical reasoning. The first one has to do with sense perception, and the increasing capacity of the mind to focus on and organize an increasing number of details and then ordering them according to pre-determined principles. The second strand deals with the intangible, with the conceptual and abstract capacities of the human mind. The identical process occurs in the realm of concepts and ideas as in the realm of sense-perceptible objects: While to begin with a child acts within the laws imposed on the physical reality of the world around us according to seemingly instinctive, inherent concepts, as it gradually learns to name more and more concepts and describe them in words, the child becomes consciously aware of them and inserts them into the inner and purely mental framework of memory. Increasingly these concepts are not only of that which is given, but that which could become—potential. Some fundamental points in penetrating this developing differentiation in the growing human mind in the area of sense perception and its accompanying expansion to conceptual thinking are elucidated by Steiner in *Intuitive Thinking as a Spiritual Path.*[63]

What is this last step towards the capacity of logical reasoning? It is the capacity of allowing the future idea in its totality to determine the *growing point, the starting point* in detail, so that from the idea back

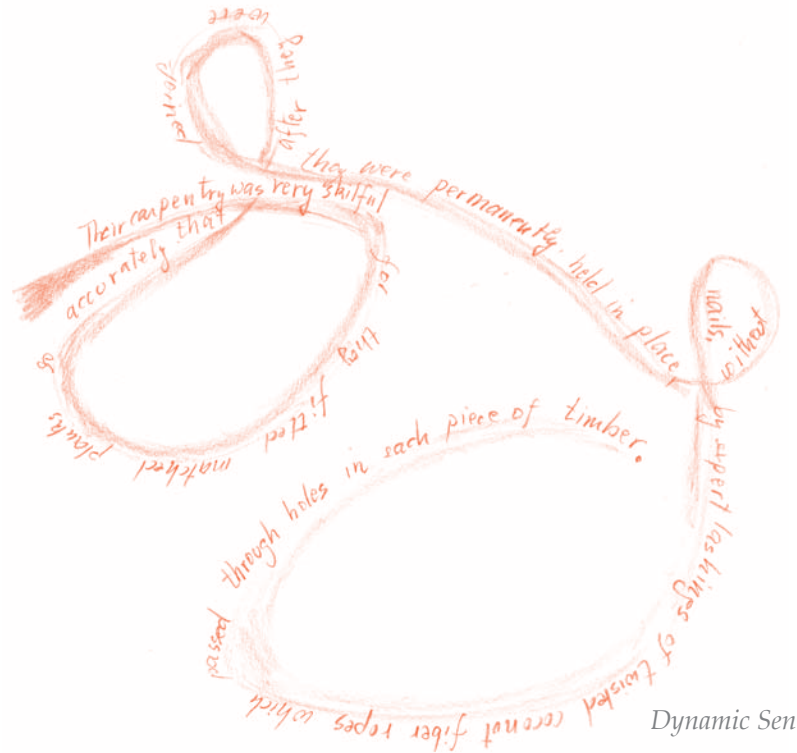
towards its starting point all steps of realizing this idea may become a fact of inner, conceptual reality. The future then determines what happens in the present almost entirely. It is also the capacity to begin thinking out this new idea in specific details, and not just in generalities. In a human being, while head, trunk, and limbs are parts of the human form, each individual has her or his individualized form of each part of the body; likewise, such a new creative idea, if indeed it has come forth from the creative human mind, must illustrate and demonstrate its creativity by showing the details which are in harmony with the whole. The human fetus protected by the mother's womb gradually develops its body. The germ of an idea in the human mind gradually acquires form and definition.

There are possible obstacles to creating new ideas. If the final idea is not vivid and concrete enough, the path towards it cannot be worked out in detail, but remains hazy in the mind and generally abstract. If the idea is vivid, but its inherent logic, which determines the steps towards realization, is unclear, in other words, if the connections and relationships with known elements are not present in the mind, then the path towards realization is not possible. Either the mind is too enamored by the idea to see the necessary details or too befuddled by the required details to envision the idea fully.

The final practice year towards the establishing of logical reasoning is the seventh grade in a Waldorf school. This means that from eighth grade on the capacity of logical reasoning ought to be available in the young person's mind and soul and the prerequisites to draw the logical connections between facts and ideas should be established. Much of the seventh grade curriculum reinforces these connections, while their application in the eighth grade considerably widens a young person's view of humanity and the cosmos. Seventh grade subjects demonstrate the creation of equilibrium through the resolution of polarities, by establishing a balancing point. I shall not give examples for the eighth grade curriculum, because the logical reasoning capacity

of the adolescent student ought to be able to apply itself to all subjects as required.

As Steiner said often in his lectures to educators, the usually dry subject of grammar requires being enlivened to the extent that a sentence, the sentence construction and the flow of a sentence with its various clauses could be pictured so accurately that it could be painted.[64] He did not think that it was essential that a clinical analysis of sentences be carried out, but that the *flow of language* in a sentence could be visually depicted.



Their carpentry was very skillful, for they fitted matched planks so accurately that, after they were joined, they were permanently held in place, without nails, by expert lashings of twisted coconut fiber ropes which passed through holes in each piece of timber.[65]

In seventh grade language arts, the emphasis is on style. A feeling for the language forms that reflect different styles, express different emotions, arises because of a diverse view point of the speaker/creator of a piece of writing—that is what is meant. When we *wish* for something, when we desire something, then desire arises from the depths of our soul (even if the object of desire is relatively trivial). When we are taken in *surprise* by an event, by an utterance of others, this surprise originates mostly from an external source. When we *admire* an object or a person, we express our innermost feeling about an external fact. In each case we are in a different situation regarding our environment and ourselves. Thus we may become aware of the subtle distinctions made in the formulation of language which express these different forms of relationships. Combined with these distinctions of style is the necessity to further learn how to express the subjunctive form of the verb. Although this was begun in the sixth grade, it is further practiced and applied in seventh grade.

A further practical application for the sensitivity in the art of language should sharpen the differentiation between reporting facts, especially observable facts, and the artistic forming of language depending on what needs to be expressed as a mood or inner experience. The distinction is made here between the inner and the outer stimuli for language, but always with an emphasis for beauty. A new and detailed creation formed by a feeling for balance and in response to outer and inner events shows the inherent logic of a new whole, a new creation.

Astronomy is another subject intimately connected with geography and history. Not only are the lives of the great Renaissance astronomers interesting, but their ideas lead us away from the sixth grade observation of the heavens that supports a geocentric view to the evolving heliocentric view, an exciting story that parallels the development of the human intellect.

An analogy can be made of the emerging view of the solar system to the state of reasoning in the young person. From the age of seven

until about ten, the mind of the child has been naturally self-centered. One dictum of Waldorf education can be stated thus: *Always begin with the child, the human being, in demonstrating a subject!* Analyses of the observable facts have gradually taught children that various categories can be used to order these facts in a logical manner. Through the preparatory capacities of focusing, comparing, and prioritizing a measure of order is established in the world of observable facts. Already in fourth grade, around the tenth year, the necessity arises that facts be brought in relationship to their ideas in terms of parts and wholes. Both need to be held in awareness simultaneously. In the course of the next years, ideas become ever more dominant in the way that the facts are ordered, and related to each other. Now, entering the last year of practice before a fully developed capacity of logical reasoning may be expected, the overriding idea becomes dominant, and the facts have to submit to it. The appropriate image in the years leading up to the seventh grade is a geocentric view of our solar system. The individual places himself into the location of the earth with the sun as the representative of the universe, revolving around it. But as soon as the idea is the all-important essence, a heliocentric system comes about—the sun, not the earth, is in the center of the solar system. The young mind allows an outside center, other causes and external events, to influence what happens. A letting go of the safe and familiar home, and a venturing into the unknown world of ideas, wherever they will lead, is a possibility if not a reality. An expansion into the space of possibilities thus begins with the beginning of sexual maturity concurrent with the capacity of logical reasoning. One further aspect has to do with balance. The resolution of conflicts, of opposing views and factors, of diametrically opposed groups and individuals (as in history), the resolution between mathematical and physical properties (as in physics)—all these demonstrate that, in whatever subject, resolution must be sought, if not achieved.

The Theorem of Pythagoras—a Measure for Balance

An extraordinary combination of the visible world with the logical world of the mind takes place whenever we concern ourselves with geometry. Preparatory steps towards an understanding of the theorem of Pythagoras allows the teacher in a Waldorf school to demonstrate the laws of geometry that build up towards an understanding of this theorem. In geometric drawing the logical mathematical laws underlying the drawing become self-evident. *Seeing is believing, or better yet, knowing directly*. As we are still dealing with grade school students, despite their growing mental and logical capacities, we continue the principle of the learning process leading from movement activity via artistic practice to the purely conceptual.

> *But there is a certain significance (and I have often tested this myself) when you aim to teach the children the Pythagorean theorem after their ninth year, that you do so by planning ahead how you will demonstrate if for them by fitting together the parts of the square on the hypotenuse. You will save much time and you will also save the children from something very significant (something that is destructive to teaching if they are not saved from it), namely: You save them from carrying out abstract thoughts in order to understand the Pythagorean theorem; you let them carry out concrete thoughts and proceeds from the simple to the complex.*[66]

What are the geometrical concepts students have to know before considering the theorem of Pythagoras? The law that states that all triangles erected over the diameter of a circle, constituting the base line, with the third point of the triangle on the periphery, are right-angled triangles. And, the mathematical formula of calculating the area of a triangle from its height and base line. Here are some activities I have used with my seventh grade.

Over several days we first walk and move on the floor, then draw, the half circle and a variety of triangles with their apexes on the circle, each time resulting in right-angled triangles, until this law is

experienced through movement, seen in the drawing, and established as concept.

We then took an equilateral triangle as our basis figure and erected over each side a square. We practiced over several days to walk this figure, with students standing at the apexes of the equilateral triangle. Then it became more complex because we began to collapse the equilateral triangle, step by step, carrying out the walking of the respective squares over each side with every diminution. We collapsed it with the student standing at the original apex making a small step towards the base line, and the other two points remaining, so that the triangle became an isosceles one, shallower by degree. Eventually the triangle completely collapsed onto the base line.

Students experience that the squares over the two upper sides become smaller and smaller as they walk them with every diminution. To begin with, all squares over the sides were equal. When the triangle is collapsed into the base line, the squares are half the area of the square below the base line. Somewhere in between must be the point at which the area of the two top squares and the bottom larger square are equal to each other. Where is that point?

Students not only walked this complex sequence, they also drew it step by step, and also worked out the areas mathematically. Now the quest is for the point of balance—where is it? Students draw different stages of the collapse, then measure the height and calculate the areas. Finally we draw a semicircle over the base line, and measure the height of the resulting triangle. We also measure the angles at the apex, and note that the further it collapses the more it opens from an original 60° opening to a 180° opening. The half circle intersects when it opens at 90°. Now all the elements have come together, and we have experienced in movement the point of balance, as well as in drawing, and now can formulate the conceptual theorem of Pythagoras in words as a principle. Thus in seventh grade we are seeking the balance between the given and the conjectured to lead us to a new reality, the creation of a new entity. Steiner challenges the ingenuity of teachers regarding

the theorem of Pythagoras in the many examples he gives in his pedagogical lectures.

All the seventh grade subjects are actually illustrations of points of balance, in physics, algebra, history, geography, physiology, and so on, because this is the overriding ideal of this grade. In this seventh grade the balance between the given and the potential expresses itself.

When following the thread of development from, roughly, the seventh through the fourteenth year, we continue the key elements of the learning process. Emotional and movement experiences prepare the ground for eventual distillation of pure concept, concept permeated by the warmth and light and life of experience.

Regarding teacher preparation for geometry, and the Theorem of Pythagoras in particular, I must reiterate that vigorous mental effort is the beginning. After several weeks, an imaginative picture may arise that will show what could be done in the classroom. It is essential that we begin with understanding the materialistic conceptual basis for each subject before transforming it into the imaginative picture and experience what will allow each student to freely develop her or his own concept in such a way that this concept does not coerce, but allows free mental development.

Working with the time dimension of preparation, each human being's, and thus also the teacher's, soul is in communication with cosmic forces of thought and will, memory and love, and so is capable of transforming mere human thoughts into significant images. It is very hard for anyone with a modern upbringing to give over one's thoughts and feelings to the cosmic processes, but without such active and conscious working with cosmic forces human beings are bereft of inspiration. This is the task that Steiner put to the first Waldorf teachers at the beginning of the twentieth century, and which deserves to be continued for the sake of the progress of humanity towards a future that allows spiritual truths to permeate life in practical ways more and more.

Conclusion

As teachers we are midwives helping the birthing process of human intelligence, as it transforms itself from the spiritual source of life into thinking capacity and wisdom of an earthly kind. As spiritual midwives we have a number of responsibilities: to make ourselves worthy in soul and body to work with children; to learn about the spiritual, physical and soul nature of children; to develop sensitivity to individual children; to help create a welcoming community of like-minded adults whose efforts are child-directed; to develop our own ethical, professional and spiritual being.

This is no small challenge. Small wonder that in today's world, cynical, materialistic and selfish, the places are few where idealism determines what needs to be done. Each person who is sensitive to human values is able to participate in a renewal of humanity. Renewal of humanity is needed. Let us bear in mind again the great cycle of human existence and experience between the physical and spiritual worlds. It is essential that human beings find the strength to remember their selves when entering the spiritual world.

The great pictures painted by Steiner for the renewal of humanity may move us to fill our souls and spirits with resolve to do our part, so that the gifts of the world of spirit and its beings of light might not be in vain over against the spirits of darkness who are their enemies, and who work to deprive human beings of their spiritual essence. It is not enough to *simply do the good*, and be indifferent to the attacks of the adversaries who attempt to eradicate the human spirit on earth. These attacks often take unexpected forms. One of the prime targets is the

human capacity for independent thought. Whenever, and wherever, children are deprived of developing their life forces in a natural way, their potential power of thought is also under attack. The Western world in particular has been infused with a false belief in authority, in a detrimental reliance on experts, whether it is in the medical, economic, religious or scientific field, the arts and education. Common sense, even, is being undermined more and more.

It takes a great effort for a human being to withstand the lures, both physical and spiritual, that want to make life so easy for us. Nevertheless, withstanding them is what is required, and we can develop the courage to school ourselves in our human responsibility, so that we are able to help children and adolescents to naturally, by respecting their whole being—that is body, soul and spirit—transform their forces of life, the gifts of the spiritual world, into knowledge and wisdom, the fruits of the physical world.

> *If the Christ Impulse had not streamed through the earthly world, an interruption, a break, would have occurred in the middle of the period between death and a new birth, bringing our existence into disharmony. Long before the Midnight Hour we should have forgotten that we were an "I" in the last life; we should have felt the connection with the spiritual world, but we should have forgotten our own identity. We have to develop our Ego [Self] so strongly on earth that we acquire this Ego-consciousness in increasing measure. But because on earth we acquire more and more consciousness of our Ego, we thereby exhaust the forces we need after death in order that we may not forget our own identity up to the Midnight Hour of existence. To be able to preserve this remembrance, we must die into the Christ Being.*
>
> *The surplus of the Christ Impulse that remains with us, adds strength to the impulse of the Spirit…and thereby there also comes into our soul an impulse of the Spirit which when we enter earthly incarnation is not exhausted in this incarnation as are the other forces which we bring with us at birth. We transform into our inner organic constitution the forces we bring out of the spiritual world.*

Awakened by the Midnight Hour of existence by the Holy Spirit, man will also be awakened while living in his physical body, wending his way through existence on the physical plane. He will awaken inwardly, roused by the Spirit out of the sleep in which he would otherwise be enveloped perpetually through purely sensory perception and the brain-bound intellect.[67]

Notes

Comment: Many quotations were translated from the original German a number of years ago, and therefore do not show the *politically correct* sensitivity that prevails now at the beginning of the twenty-first century. I have not altered these quotations.

1 Such descriptions of the Waldorf curriculum are available from AWSNA Publications, Rudolf Steiner College Press, and Steiner Books.

2 In Waldorf schools traditionally all main subjects are taught in block periods lasting three to five weeks in the first two hours of the school day. This enables the teacher to enter deeply into each subject and to develop all facets of the learning activities.

3 This is an example of one poem suitable to the subject. Teachers find their own poetic, musical and artistic material to fit the respective intellectual contents.

4 For instance in the illustrations in medieval and Elizabethan texts on the place of the earth in the cosmos, the space between the orbit of the moon and the surface of the earth was always designated by the four elements, from above, fire and air, and water and earth on the earth surface.

5 We shall summarize in a later chapter how a teacher needs to deal with the element of time in her or his preparation and planning.

6 Steiner discusses this three-day process in *Waldorf Education for Adolescents*, GA 302, Anthroposophic Press, Hudson, NY, 1996, Chapter 3, June 14, 1921.

7 Steiner advocates that everyone, not only teachers, review the day in reverse order, as a means to enter sleep unburdened by the emotional or intellectual baggage one has collected during the day, so that sleep will allow a person to be truly refreshed. There are many aspects to one's relation to sleep, which Steiner discusses in many of his works, for instance in *The Outline of Esoteric Science*, Chapter 5, Anthroposophic Press, Great Barrington, MA, 1997.

8 Some Waldorf musicians might object to this song on the grounds that the melody is complex and not pentatonic, which is better for young children regarding their musical expression. However, the verses are so suitable to the introduction of numbers, that one could make an exception.

9 It is preferable, in my view, to introduce the Arabic numbers rather than the Roman numerals as is often mentioned in the Waldorf curriculum. Most children are familiar with Arabic numerals, and in my teaching experience I have found it confusing for children to use fingers for counting, as this often becomes a fixation, and one has to work diligently to get students away from using their fingers. In any event I believe that each child should experience himself/herself as a wholeness, and so in learning activities to be introduced later in Grade One should represent a *1* and not experience the split which the use of fingers invites—hence Arabic numerals.

10 *Good Book* refers to the permanent record of work done, in contrast to a practicing book, where the material for the pages of the Good Book is being prepared. It is good to make a distinction between

practice and permanent record, which should contain both examples and rules, and which will give the students a sense of their achievements when they review the year's work at the end of each year.

11 Rudolf Steiner, *The Foundations of Human Experience,* Anthroposophic Press, Hudson, NY, 1996, Chapter 1.

12 Astral body: the configuration of the conscious soul forces of cognitive, emotional and volitional capacities, interspersed with what lives in our subconscious arena. This astral body is also in subconscious contact with the astral bodies of other human beings and also other beings.

13 Ether body: the configuration of life forces and life processes which are in continuous flux, but which form the life organism of a human being, animal or plant, and which are in interaction with the life forces of other living creatures around us.

14 Rudolf Steiner, *Background to the Gospel of St. Mark*, Rudolf Steiner Press, London, 1968, GA 124, Lecture of March 7, 1911.

15 Also called Klingsohr's fairytale, in Novalis, *Hymns to the Night and Other Selected Writings,* translated by Charles E. Passage, The Library of Liberal Arts, Bobbs-Merrill Educational Publishing, Indianapolis, 1977.

16 Steiner details these three forms particularly clearly in his *World History and the Mysteries,* Rudolf Steiner Press, London, 1997, Lecture of December 24, 1923, GA 233.

17 For instance, the ancient Egyptian ruler Akhenaten's statues were defaced by his successors.

18 Rudolf Steiner, *Theosophy,* Anthroposophic Press, Great Barrington, MA, 1994, GA 9, beginning of Chapter 2.

19 Rudolf Steiner, *The Foundations of Human Experience,* op. cit., Lecture of August 28, 1919.

20 Rudolf Steiner, *Man's Being, His Destiny, and World Evolution*, Anthroposophic Press, Inc., New York, 1966, GA 226, Chapter IV.

21 Paraphrased from Steiner's *Waldorf Education for Adolescence,* GA 302a, Lecture of June 22, 1922. This lecture is not available in English.

22 Many descriptions of all human constituents, both physical and spiritual, can be found in Steiner's works, for instance in the above-mentioned book *Theosophy,* op. cit.

23 Some methods are described in this author's book *The Temperaments and the Arts*, which gives a number of examples of learning activities making use of temperament teaching. AWSNA 2003.

24 Steiner, *The Foundations of Human Experience,* op. cit., end of Chapter 2.

25 The Key Picture of the Learning Process is also described in Chapter 2 of this author's book *The Temperaments and the Arts*, op. cit.

26 The idea of approaching all parts of the human psyche is only possible if the teacher is in complete control of both the content and the methodology of classroom work. Therefore, as mentioned above, textbooks are not used in the lower grades of a Waldorf

school. The whole point of this book is to prepare teachers to take the responsi- bility of working out their own lessons. I am addressing here the *how* and only incidentally the *what* in examples.

27 This assumes a two-hour lesson, the main lesson of a Waldorf school.

28 A daily artistic opening experience is essential in today's world. Students come to school burdened by family events, traffic, and their own problems. Artistic, rhythmical, and musical work allows them to make the transition from home to school, and to begin the school day prepared for real work, alert and alive, and balanced in themselves.

29 This musical, poetic and rhythmic work would essentially remain the same over several weeks.

30 Rudolf Steiner, *Deeper Insights in Education: The Waldorf Approach*, Anthroposophic Press, Spring Valley, NY, 1983, GA 302a, Lecture 1.

31 Robert J. Sternberg, *Metaphors of Mind. Conceptions of the Nature of Intelligence*, Boston: Cambridge University Press, 1990.

32 Lyall Watson, *Lifetide. The Biology of the Unconscious*, Simon & Schuster, NY, 1979.

33 Rudolf Steiner, *The Inner Nature of Man and the Life Between Death and a New Birth*, Anthroposophical Publishing Company, London, 1959, GA 153, Lecture of April 12, 1914.

34 Ibid.

35 Ibid.

36 Ibid.

37 Rudolf Steiner, *Life between Death and Rebirth, the Active Connection between the Living and the Dead,* Anthroposophic Press, 1975, GA 140, Lecture of March 12, 1913.

38 Steiner uses here the grammatical form of the gerund to indicate that these processes are in continuous activity and at no time are at rest.

39 Rudolf Steiner, *The Riddle of Humanity*, GA 170, Rudolf Steiner Press, London, 1990, particularly the Lectures of August 12 and August 15, 1916.

40 For instance in Rudolf Steiner's *Spiritual Science and Medicine,* Rudolf Steiner Press, London, 1975, GA312, or his *An Occult Physiology*, Rudolf Steiner Publishing Co., London, 1951.

41 Rupert Sheldrake, *A New Science of Life, The Hypothesis of Formative Causation*, J.P. Tarcher, Inc., Los Angeles, 1981.

42 This is not the place to discuss the ethical and pedagogical implications of in vitro fertilization, though I suspect that future generations will have to deal with this topic not only philosophically but also practically.

43 Thomas J. Weihs, *Embryogenesis in Myth and Science,* Floris Books, Edinburgh, 1986.

44 Rudolf Steiner, *Balance in Teaching*, Mercury Press, Spring Valley, NY, 1982, GA 302a, Lecture of September 12, 1920.

45 Ibid.

46 Rudolf Steiner, *The Renewal of Education*, Steiner Fellowship Publications, Michael Hall, Forest Row, U.K., 1981, GA 301, Lecture of April 20, 1920.

47 Ibid.

48 Howard Gardner's book, *Frames of Mind: The Theory of Multiple Intelligences*, 1983, as cited by Robert J. Sternberg in his *Metaphors of Mind*, op. cit.

49 Paraphrased from Rudolf Steiner, *Goetheanism as an Impulse for Change and Rejuvenation*, GA 188, Lecture of January 5, 1919.

50 Rudolf Steiner, *Warmth Course*, Mercury Press, Spring Valley, NY, 1988, GA 321, Lecture of March 14, 1920.

51 Caroline von Heydebrand, *The Curriculum of the First Waldorf School*, Steiner Schools Fellowship, Michael Hall, Forest Row, Sussex, UK, 1989.

52 Friedrich Schiller, *On the Aesthetic Education of Man, In a Series of Letters*, Translated by Reginald Snell, Frederick Ungar Publishing Co., New York, 1977, From the 14th letter.

53 Rudolf Steiner, *Goetheanism as an Impulse for Transformation*, op. cit., Lecture of January 24, 1919.

54 For instance in Steiner's *The Child's Changing Consciousness*, Anthroposophic Press, NY, 2000, GA 306,and *A Modern Art of Education*, Rudolf Steiner Press, London, 1981, GA 307.

55 In a Waldorf school it is often easier to work with a class of 20 to 30 students than a smaller class. A very small class invites too

much of an individualistic approach and prevents the teacher to develop working with the group as a whole.

56 R.A. Schwaller de Lubicz, *The Temple Is Man*, *Sacred Architecture and the Perfect Man*, Inner Traditions International, New York, 1977.

57 Jean Richter, *Sacred Geography of the Ancient Greeks*, *Astrological Symbolism in Art, Architecture and the Landscape*, State University of New York Press, 1994.

58 Paraphrased from Rudolf Steiner, *The Orient in the Light of the Occident*, GA 113, Lecture of August 25, 1909.

59 While it is advantageous to have books retelling the great myths as readers for this age, the teacher's own retelling and that direct emotional impact, cannot be replaced easily.

60 Leo Heirman, *Pictures of Initiation in Greek Mythology*, Schaumburg Publications, Inc., Roselle, IL, 1987.

61 Rudolf Steiner, *Practical Advice to Teachers*, Rudolf Steiner Press, London, 1976, GA 294, Lecture of August 29, 1919.

62 A few years ago I attempted, as I had once before, to teach fundamental astronomy to adults the same way I had successfully taught adolescents. This was a complete failure, until I resorted to the *regular* explanations given by conventional astronomy, and *then* showed what the learning activity should be for sixth and seventh graders. It was an interesting experience, demonstrating that adults need to begin with learning data conceptually, before transforming them in an imaginative way, whereas students still live within the imaginative and will come to the conceptual abstractions by and by.

63 Rudolf Steiner, *Intuitive Thinking as a Spiritual Path*, Anthroposophic Press, 1995, especially Chapter 3. Of course, this book is written for adults as a guide to recognize one's thinking processes as steps towards spiritual cognition. However, the relationship of sense observation and thinking is very clearly outlined here.

64 Rudolf Steiner, Stuttgart, June 22, 1922, in *Erziehungsfragen im Reifealter. Zur kuenstlerischen Gestaltung des Unterrichts*, GA 302a, not translated. To paraphrase some of Steiner's remarks, "One should not miss an opportunity, even for ten- to twelve-year-olds, to find an artistic, spatially poignant form for demonstrating complex sentence structures. For instance, one shows the main sentence to be a circle, and the subsidiary sentences could be spokes radiating into the circle. It is important to introduce the pictorial element to show style and so demonstrate the moral character of the subject."

65 Taken from a description of Arab Dhows in *Ferdinand Magellan, Circumnavigator*, Charles McKew Parr, Thomas Y. Crowell Company, 1953.

66 Rudolf Steiner, *Practical Advice to Teachers*, op. cit., Lecture 10.

67 Rudolf Steiner, *The Inner Nature of Man*, op. cit., Lecture of April 14, 1914.

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