

Institute for Christian Teaching
Education Department of Seventh-Day-Adventists

**CHRISTIAN VALUES IN THE TEACHING OF
THE PHYSICAL AND BIOLOGICAL SCIENCES:
A PRACTICAL APPROACH**

By

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Introduction

Christian schools are borne by a vision of conveying the Christian faith and values to the students, not only in introducing them to and strengthening their faith in a personal God, but also contributing to their moral, ethical and social development as well. In this way the youth can be helped in making good choices in all the offerings of life.

Christian values have their origin in God. “He has shown you, o man, what is good; and what does the Lord require of you but to do justly, to love mercy, and to walk humbly with your God? (Micah 6:8). In essence Christian values are God’s purposes for his creation and contribute to the formation of Christian character (Taylor, 2003).

There are several ways of achieving the goal of integrating faith and Christian values into teaching. In the past suggestions mainly concentrated on the introduction of spiritual offerings outside the classroom/lesson, such as special worship time, prayer meetings etc. The majority of time spent at school, however, is dedicated to the acquisition of knowledge; therefore the focus is mainly on cognitive development and neglects character development.

The Christian view of life, however is a holistic one. Without a holistic perspective that relates knowledge to faith and the ultimate source of Truth, knowledge becomes fragmental.

It is important that Christian values permeate every aspect of school life in order to prevent a separation between learning and studying a subject on the one hand, and faith and devotion on the other. Thus a school becomes truly Christian when a spiritual atmosphere prevails during the class time and in the study of all the subjects. When teaching a topic there must be an overlap between the two to overcome the disjunction of faith and learning. Faith and learning have to meet and merge.

Christian classroom teaching should involve God’s wisdom as opposed to the acquisition of mere human knowledge. If faith is not integrated into the acquisition of knowledge but only taught at home and in the church, it causes confusion.

To be able to have an influence on the development of the values in student’s lives, teachers have to cultivate values in their own lives.

In this essay the influence of Christian values on the acquisition of knowledge as well as on future studies will be pointed out. Furthermore, the impact on the student's life will be discussed. Examples for achieving the goal of integrating faith and Christian values with the teaching of the biological and physical sciences are suggested with the aim of promoting the moral, ethical and social development of the student.

Christian Values

The following value areas with a sample listing of Christian values have been adapted. from Taylor (2003).

Academic	Aesthetic	Ethical	Religious	Personal	Social
Accuracy	Attractiveness	Acting on principle	Awareness of Christian issues	Adventure	Acceptance
Clarity	Balance	Benevolence	Belief	Astuteness	Affection
Coherence	Beauty	Dependability	Devotion	Balance	Affirmation
Competence	Contrast	Ethical sensitivity	Earnestness	Certainty	Altruism
Critical Analysis	Creativity	Fairness	Forgiveness	Cleanliness	Appreciation
Curiosity	Delicacy	Flexibility in judgment	Genuneness	Confidence	Awareness of heritage
Discernment	Diversity	Freedom	Grace	Contentment	Candidness
Discrimination	Dominance	Goodness	Holiness	Creativity	Charisma
Evaluation	Economy	Honesty	Hope	Curiosity	Cheerfulness
Independent thinking	Elegance	Humaneness	Love	Decisiveness	Cooperation
Inquiry	Fluidity	Impartiality	Mission	Determination	Courtesy
Insight	Gracefulness	Independence	Patience	Diligence	Dependability
Knowledge	Gradation	Integrity	Purpose	Flexibility	Devotion
Logical thought and expression	Harmony	Justice	Repentance	Forethought	Empathy
Neatness	Impact	Loyalty	Reverence	Imagination	Friendship
Objectivity	Integration	Mercy	Righteousness	Impartiality	Geniality
Perfection	Originality	Obedience	Self-control	Independence	Graciousness
Precision	Realism	Openness	Selflessness	Industriousness	Gratitude
Reasoning	Responsiveness	Purity	Self-motivation to develop faith	Ingenuity	Hospitality
Relevance	Rhythm	Pursuit of truth	Sense of worth in God's eyes	Initiative	Modesty
Sensibility	Sentiment	Reliability	Significance	Intuition	Participation
Sensitivity	Serenity	Respect	Sincerity	Liveliness	Patriotism
Structure	Simplicity	Self-control	Solemnity	Openness	Politeness
Tentativeness in research	Spontaneity	Sincerity	Spirituality	Perceptiveness	Sensitivity
Thoroughness	Subtlety	Stability	Thankfulness	Persistence	Supportiveness
Understanding	Surprise	Trustworthiness	Trust in God	Personal growth	Sympathy
Workmanship	Symmetry	Truthfulness	Unselfishness	Positive outlook	Thoughtfulness
	Unity	Uprightness		Safety	Tolerance
	Variety			Temperance	Willingness

Examples of values in the Bible

- Spiritual growth: 2. Cor. 3:18; Eph. 4:15-16; 2. Peter 1:4-8
- Honesty: Lev. 19:35, 36; Deut. 25:15, 16; Prov. 10:2; 11:3; 20:10;
2. Cor. 8:20, 21
- Justice: Gen. 18:19; Deut. 27:19; 32:4; Ps. 98:9; 99:4; Jer. 22:15;
Amos 5:15; Col. 4:1; Micah 6:8

Responsibility:	1. Sam. 20:4; Matt. 20:1-16; Luke 19:1-10; John 19:26, 27; Phil. 2:22
Benevolence:	Prov. 11:24, 25; Luke 12:33; Acts 11:29; Rom. 12:8; 1. Cor.13:3; 2. Cor. 8:9-15
Tolerance:	Rom. 14:1, Matt.7:2
Unselfishness:	Dan. 5:17; Acts 4:34, 35; 1 Cor. 10:24; 13:4; Phil. 2:3, 30
Equality:	Gal. 3:28
Integrity:	Prov. 20:7
Cooperation:	Jes. 1:8
Freedom:	John 8:32
Respect:	Matt. 7:12
Unselfishness:	Acts 20:35
Humbleness:	Micah 6:8
Love:	Micah 6:8, Matt. 10:30-31; Isa. 54:10; Jer. 31:3-4

The Influence of Faith and Christian Values on the Acquisition of Knowledge

Christian values open the mind to knowledge, whereas the lack of Christian values results in restricted thinking and limits the acquisition of knowledge. Being in contact with an omnipotent Creator-God opens the mind to a wider horizon of knowledge. "In Christ there are all the treasures of wisdom and knowledge". Real knowledge requires opening up the minds to the mind and opinions of others, the ability to deal with criticism and the will to use constructive criticism for one's own development. This self-critical approach prevents us from ending up in the dead-end street of own convictions. Klippert, a German expert on education stresses teamwork and social competence as those skills which help pupils to learn better and be prepared for the world of work. Interestingly enough, these values or skills are closely related to Christian values.

The Effect on Further Studies

Contact with the ultimate source of Truth broadens the mind of humanity (Daniel and his friends in Daniel 1:20).

Many science students who study at non - Christian universities lose their faith because they have not learned to integrate their faith into the acquisition of new knowledge. It becomes

difficult to discover faith in their advanced studies and consequently faith loses its significance in the life of the student.

If a student, however, has a thorough foundation of faith and a practice of religious thinking in all the aspects of further life, he or she is more likely able to cope with the different views and can build an individual position on the basis of his or her faith.

Students who are taught in this way are likely to use their research to seek ways to help humanity and are unlikely to use research for detrimental purposes.

The Impact on Students' Lives

The public schools in Germany are experiencing deterioration in moral values. Students increasingly are getting involved in drugs. Aggressive behavior towards students and teachers is increasing. This trend to destructive behavior is alarming.

The Holy Spirit teaches us, guides us and allows us to discern truth from error (John 14:26).

The love for life and all the living things produces the desire to promote growth both in human beings, social groups or ideas (Fromm 1978). The respect and love for one's own life open up the ability to love others and broaden our appreciation for the diversity of life. The love for life and living things is based in God's character. A lack of parental or teacher's love and a lack of self-esteem prevents growth and development in humans.

The destructive behavior towards nature which is being practiced by the so-called 'civilized' countries, has resulted in an unconscious education of aggression towards mankind (Fromm 1978). Fromm offers a solution to this development: Only the love for life and the love for human beings and other living things can implement a return from the dangerously developing path of mankind and could be the basis for an educational process in every human being.

Love for nature and people derive from a relationship to God and the experience of being loved by God despite imperfections. Christian faith and values thus guide the student towards noble goals, but also inspire and motivate.

Teaching which bears in mind the integration of Christian faith and values may counteract the loss of respect for God’s creation and the idea that life is coincidental. This in turn produces a positive effect on the natural environment and fellow human beings. Furthermore, it has the consequence of counteracting the belief in the unfailing power of human beings through technical advances and selfishness. Therefore, it has not only an influence on the ethical thinking and acting of the student towards fellow human beings but also on the shifting of cultural values and the resulting disorientation.

Examples for Lessons in the Biological Sciences

Lessons should be prepared in such a way that the subject of the class fits into a pattern for understanding the whole world and God’s part in it. Education in all the subjects needs to be an experience where the entire curriculum is viewed from a Biblical perspective and values. “God has chosen to communicate through nature (Psalm 19:1). A display of God’s creative and sustaining power can be perceived by an unbiased observer (Isaiah 40:26).

There is an abundance of themes in science that lend themselves to the incorporation of Christian values and faith in learning. The themes presented here are only a small sample. Once teachers make it a habit of viewing science from a Christian perspective, more ideas will occur.

Subject area	Theme	Christian faith and values taught
Animals: Birds	The high temperature of birds and their rapid circulation make them far more efficient than any airplane	Economy
Animals: Bird-feathers	A single wing feather of a pigeon consists of more than one million parts. Bird wings automatically adjust to every slight change in air flow. A minor shift in two key feathers would ground a bird. Sensory receptors record the precise position of each feather and effect the fine re-adjustments of 12000 tiny muscles	Diversity Creativity Design Elegance Gracefulness Delicacy God has the power to create whatever he wishes. Ps. 115:3
Animals: Birds	A hawk’s eyes are 8 to 10 times keener than a human’s. The eyes of a pigeon can read a newspaper at a distance of 30 m	Accuracy Divine order of creation Ps. 104

Subject area	Theme	Christian faith and values taught
Animals: Birds	Hummingbird: The bird and the flower it feeds from are a perfect match Mites hitchhiking on hummingbirds See text	Design Giving and receiving Support Dependability Prov. 11:25
Animals: Spiders	Spider's net See text	Stability Creativity Beauty Flexibility Design
Animals: Fire-flies	Light organ see text	We can allow God's light to penetrate to us; but we can also prevent it from reaching us. Matth.5:14-16; Ps. 119:105
Animals: Bees, ants	Bee - hive Ants' nests	Altruism Cooperation Dependability Sensitivity Supportiveness Prov. 6:6
Plants	Plants always grow towards the light	Humans long for the light of God. Jesus is the light. Ps. 119:105, Matth.5:14-16
Plants	The transport of water: Through transpiration water is drawn up.	Giving and receiving Prov. 11:25
Plants	Seeds and fruits Seed germination See text	Spiritual growth 2. Cor. 3:18; Phil. 1:6
Plants	Rotating maple seeds. The time of flight to the ground is delayed by rotation. The possibility of being carried further away by the wind is increased	Design Creativity

Subject area	Theme	Christian faith and values taught
Plants	Environmental conditions of germination	Growth of spiritual life
Plants	Fir tree cones pattern, sunflower seed arrangement, the golden angle See text	Beauty Purpose Creativity Symmetry Originality Aesthetics Ps. 115:3 Ps. 119:18
Plants	No two leaves are alike	Diversity Creativity Variety Ps. 104:24
Plants	Photosynthesis	Absorbing God's light 2. Sam. 22:29 Ps. 18:28 Luke 1:79 John 1:4
Animals/plants	Anatomy	Appreciation Beauty Respect of life Ps. 105:5
Animals	Structure of the abalone shell, the hardest, most durable material in nature. See text	Wise design Ps. 104:24
Animals	Migration of the monarch butterfly See text	Wonders in nature Ps. 105:5
Ecology	Well-organized food chains and nets in nature	Thankfulness Order Harmony Ps. 104:12-18
Ecology	Recyclability See text	Order Efficiency
Ecology	Pollution Waste-disposal Global warming Preserving nature The exploitation of natural resources	Conservation Responsibility Sensibility

Subject area	Theme	Christian faith and values taught
Behavior	Symbiosis	Selflessness Love Service Personal growth
Behavior	Aggression Competition	Forgiveness Love Self-control Repentance Mark 12:31
Behavior	Circadian and circatidal rhythms see text	Accuracy Perfection Rhythm Precision Perfection Ps. 104:19-23
Behavior	Sexism Racism Culture	Acceptance Love Equality Freedom Patience Tolerance Justice Ps. 139:24 Mark 12:31
Behavior	The migration of birds and other animals	God's guidance Ps.139:24 Ps. 16:11 Ps. 119:35
Cell biology	The membranes 'decide' which substances enter and leave a cell	Critical analysis
Cell biology	In order to haul coal equivalent to the energy of the sun daily captured by the plants of the earth would take 20 million coal cars, making a train that would circle the globe six times.	Respect Forethought Provision
Genetics	In order to develop a new human being, you would have to gather an impressive list of raw materials and assemble over a quadrillion nucleotides.	Creativity

Subject area	Theme	Christian faith and values taught
Genetics	The synthesis of protein in sequence involves a maze of interrelated circuits, each part depending on the other.	Cooperation Dependability Participation
Genetics	Genetic manipulation Cloning	Respect of God and his creation Freedom of choice and its consequences
Neurology	The nerve cells of the nose can detect one one hundred trillionth of a pound of garlic odor per quart of air. The moth only needs a few molecules.	Accuracy Competence perceptiveness
Neurology	Electrochemical signals travel over a network of nerves; 1000 impulses a second are conveyed over one nerve.	Independent thinking Logical thought and expression Sources of knowledge Awareness of heritage 1. Thess. 5:21
Evolution	Pointing out deficiencies of the evolution theory Creation	Respect of God Sabbath Gen. 1 Ps. 33:6-9 Isa. 45:12, 18 John 1:1
Humans	Birth control Premarital sex Abortion Sexually transmitted diseases Relationship	Respect of life Value of life Love Unselfishness Self control Responsibility John 8:1-11 Ex. 20:13, 14, 17 Isa. 48:17 Mark 12:31
Humans	A mother's love to her child leads to the physical and mental growth of a baby	Spiritual growth through God's love is experienced by man
Human, animals, plants	Healing processes in humans, animals and plants	Hospitality Supportiveness Love

Subject area	Theme	Christian faith and values taught
Health	Alcohol Smoking Drugs	Responsibility Self-control Personal growth Honesty Willingness
Health	Sabbath keeping	Respect Rhythm Spiritual and physical health Gen. 1 Mark 2:27 Ex. 20:8-10
Health	Biblical and Adventist health views, fitness, vegetarianism	Beauty Health Growth Ps 119:18
Diversity of animals and plants	700 000 species of insects 9000 species of birds 4000 species of mammals	God's creativity Ps. 104:24

Examples of lessons in the physical sciences

Subject area	Theme	Christian faith and values taught
Optics	Optical illusions: The size of sun seems to increase at sunset. Illusions of dark and light depending on the contrast. Snow seems whiter than clouds whereas it is the other way round.	Illusion versus truth Are we on the right path? Ps. 139:24
Optics	The rainbow see text	God's covenant with man
Optics	The angle of perspective	Trust Wisdom When God comes closer to us our angle of vision becomes wider

Subject area	Theme	Christian faith and values taught
Optics	We can only see objects from which light is reflected and passes into our eyes	We can reflect the light of Christ to others Joh. 8:12, Matth.5:4, Luk. 11:33-36
Optics	The camera The Microscope	Focus on beauty Curiosity
Mechanics	The lever in balance	Balance Stability Trust in God
Heat	Anomaly of water See text	Wisdom Physical and spiritual life is only possible under certain conditions
Hea	Snow crystals	Growth Conditions for growth
Electricity	Thunderstorms see text	Almighty God Union with God results in the production of great energy through his power Nahum 1:3 Ps.18:13
Laws	All the laws of physics The ordering principle of numbers, Geometrical and arithmetical relationships	Harmony through law and order Power of God Ps. 19:7,8 Job 38:4, 5
Astronomy	The constellations of the stars	Harmony Divine plan Job 9:7-9; Ps. 148:3, 6
Astronomy	Cosmic rhythms	Divine order Ps. 104:19

The Hummingbird

Birds and flowers are perfect matches. The long bill of the hummingbird *Calepte anna* can deeply probe into the corolla, the fuchsia's narrow tube of petals. When the tongue touches the bottom of the tube, pollen from the male organ of the plant, sticks to the bill and chin feathers. When drinking from another fuchsia blossom, the bird deposits the fertilizing pollen on the pistil, the female organ of the blossom, and again receives pollen from the stamen. The fuchsia blossom is designed in such a way that it excludes other insect nectar feeders. All more than 300 species of hummingbirds feed primarily on nectar and therefore serve as important pollinators.

Tiny mites also drink from the flower's nectar. For a continuous food supply they hitchhike on the hummingbirds, racing up the bills of the feeding birds, stowing away in their nostrils in order to race down into the next flower the bird visits (Ewald, P. W. 1982). This is a good example of support and dependability. We all need support and are dependant on each other and on the live-giving God.

Spiders' Webs

The silk of the spider-web is strong, tough and elastic; it is finer than human hair, lighter than cotton and stronger than steel. It is tougher, more elastic, and more waterproof than the strands of the larvae of the silk moth. Moreover, spiders can produce up to seven different types of silk with different strength, stickiness, translucence and flexibility. Capture-silk (in the centre of the web) can stretch almost three times its length and return to its original shape unharmed. Thus it allows the web to oscillate back and forth after an insect hits it. Dragline-silk is even stronger, but less flexible and is used to form the guy lines and framework of the web. Although 30 times thinner than a human hair, it is far more elastic and lightweight. If its diameter were increased to half the diameter of a human hair, it could hold two medium-sized people. If bundled into a cord as thick as a pencil, it could stop a jet landing on an aircraft carrier. The planar web is an extraordinarily efficient structure for capturing fast-flying, massive objects. It is analogous to a fishing-net catching a passenger plane (Dovich, 2002)!

Man is clumsily trying to reduplicate God's design. Compared to this amazing spider material, the closest man-made material, Kevlar, is produced using petroleum-based materials at high temperature and pressure in a sulphuric acid bath. All these materials are harmful to

the environment, whereas the product of the spider can be reused by the animal itself. Here, our ignorance and limitations become very evident.

Fire Flies

The light of the light organs of the fire-flies is produced when the chemical luciferin is oxidized by the enzyme luciferase. Energy is set free and first stored in the molecule by an electron being put at a higher level. When the electron falls back to its original level it emits a light-quantum which is in the green part of the spectrum. Fire-flies can switch their lights on and off by releasing the enzyme or not releasing it. They use their organs of light to attract the opposite sex. Without their light there is no way of getting together. Christ refers to Himself as the light (John.8:12). Like him, we should be a light that attracts people who live in the darkness and need the hope of the Gospel (Matth. 5:4, Luke 11:33-36).

Seed Germination

The parable of the growing seed teaches the varied processes of human growth in a human being.

The seed needs water, minerals, air and the sun in order to develop in its own time and conditions. The germination principles can be compared with the beginning of spiritual life. The development of the plant is a figure for the development of character. Each person's spiritual growth is different according to his appropriate needs. Each path of life is unique.

Fir -Tree Cones and Sunflower Seeds

The pattern of the arrangement both of the scales of the cone as well as the seeds of the sunflower have one thing in common, the angle of 137.5° . The scales of the cones are arranged in a specific geometric structure which takes the form of a spiral winding around the cone. A careful look reveals that they form in two directions, a right and a left spiral. We mark a scale and then count the windings of the spiral, first right and then left around; to the right we will always count 5 and to the left we will always count 8. Going left one can discover a third spiral which is steeper and has 13 spiral windings. 13 is the sum of 5 and 8. These numbers are part of the Fibonacci series ($5+8=13$, $13+8=21$, $21+13=34$, $34+21=55$). The sunflower seed arrangement always shows 34 and 55 spiral windings (Wittmann, 2000). This example shows God's concern for aesthetics and beauty. This can be seen in the minutest details of nature.

Fig.1 Sunflower seed arrangement (J. Wittmann, 2000)

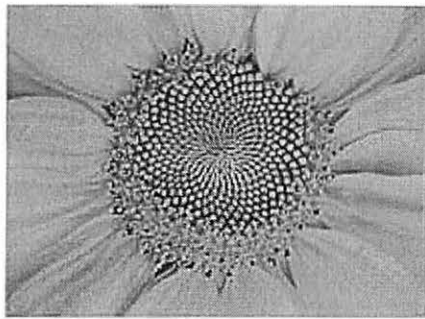


Fig.2 fir-tree cone (J. Wittmann, 2000)

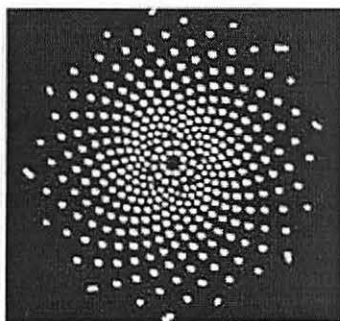
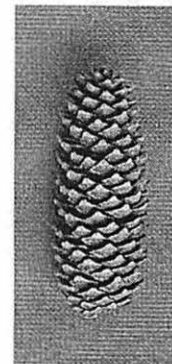


Fig.3 Simulation of the sunflower seed arrangement (J.Wittmann, 2000)

The Abalone Shell

The abalone mollusc produces a shell which is one of the hardest, most durable materials in nature. The shell consists of alternating layers of hard, ultra-thin chalk platelets held together by an organic protein matrix which is one billionth of a meter thick. The ordered structure increases the strength of chalk by a factor of 20. The matrix has the strength of the most advanced synthetic ceramics, is however not as brittle as they. Unlike the brittle character of the man-made product, the material of the abalone shell absorbs cracks in the soft layer so that they do not propagate (Dovich, L.). The much wiser natural design of our Creator is once again shown here.

Migration of the Monarch Butterfly

One of the miracles of the insect world is the annual migration of the monarch butterfly *Danaus plexippus* through America. About 100 million butterflies migrate from south-east Canada and the East USA to Mexico. Here they stay over winter at only 11 places within the volcanic mountain area of central Mexico. In spring they fly to the golf region of the USA, lay eggs and die. It takes several generations of butterflies to return to the original place in the

north of America. They fly up to 4,800 km and till today it is not clear what helps them migrate over such enormous distances (O' Toole, 2000). God wants to guide us on our paths.

Recyclability

Everything in nature is bio-gradable. All life is based on the carbon and nitrogen cycle. By absorbing carbon dioxide and water, the plant produces organic matter using the energy of the sun. This organic matter is then consumed by animals. It is broken down into its basic components by fungi and bacteria when plants and animals die. Thus carbon dioxide is set free to be used again by the plants to build organic matter. Nothing is wasted – a very efficient cycle of production and degeneration.

Circadian and Circatidal Rhythms

Living creatures have an internal clock. The circadian (day-and-night) rhythm and the circatidal rhythm both are an expression of this clock. The day-and night rhythm is set by light (the sun) whereas the circatidal rhythm is set by the attracting forces of the moon. Under constant conditions these rhythms are still present but running freely. The sea slug *Onchidium daemeli* is active when it is low tide and inactive when it is high tide. Just before high tide, it buries itself in the mud. Moreover, it shows a higher rate of activity when the low tide is very low (von Wallenstern, 1986).

In his wisdom God has prepared a day-and-night rhythm, a time of action and a time of rest. He knew that we need rest for recreation and reflection once a week. In human beings as well it has been established that the circadian rhythm is still detectable under constant conditions. In this way we are provided with a knowledge of our need to rest and should be alert to it. We should not work against this establishment of God.

The Rainbow

The rainbow does not really exist! Only when we look at it, is it formed on the retina of the own eye and is projected from it into the landscape. Every one of us therefore sees his or her own rainbow, depending on the place where one is standing.

Raindrops in the atmosphere are round. The light rays are refracted by the drops then reflected and then refracted once again. Because white light consists of all the colours of the spectrum and these have different wave-lengths, the white light is split into the rainbow colours.

The rainbow is a sign of God's covenant with man. This covenant is an individual one, as each person has a different relationship to God caused by differing needs according to our spiritual state.

The Anomaly of Water

Water has its greatest density at 4 °C rather than 0°C – that is, at a temperature greater than its freezing point. This is unlike most other fluids. That means that when lake water cools down in the winter, it is not the ice of 0°C that sinks to the bottom but the heavier 4 °C water.

Therefore this strange phenomenon makes life on the bottom possible.

By this example, we are shown that certain environmental conditions are necessary in order to make life possible. Also spiritual life requires specific conditions for growth.

Thunderstorms

Air masses move through the rising of warm air. This causes a separation of electrostatic charges. Thunder is the result of the reunion of electrostatic negative and positive charges. A very spectacular manifestation of this is lightning (energy set free). The sound of thunder is caused by the rapid increase of temperature and the sudden expansion of air.

Thunderstorms are forces which we cannot influence or control. They show us that after all we are not as mighty and above everything as we often think we are.

Conclusions

God's creation, though fallen, is still beautiful and filled with surprising by functional design, which has proven to be extraordinarily effective. Obviously the Creator was concerned with aesthetics. There is an immense variety in colours, shapes, textures and functionality. These designs in nature point to the wisdom and creativity of the Creator God and show us how finite our knowledge is. The fact that humans try to reduplicate God's design for technical purposes, just shows that. Nature conveys a knowledge of God's character. The more we study it, the more we will learn about the Creator. Christ himself used illustrations from nature. Teachers bear a responsibility in sharing the creation with students (White, 1913).

I would like to encourage Christian teachers at Schulzentrum Marienhöhe and similar schools to develop new methods and ideas in the preparation and execution of their lessons. This will help students to first understand Christian values, secondly adopt them and thirdly profit from

them. Such a learning process will facilitate their spiritual and social development at school as well as their further development in life.

It is not enough to be a humanistic school where students are treated kindly. We must give our students tools which will help them to master their lives. The development of Christian faith and values are important and absolutely vital for the individual. We bear a great responsibility in contemporary society when it comes to reversing the decline of morals and ethics.

Quality Christian education involves additional preparation in subject matter and pedagogy beyond the common state-government educational preparation for teachers.

Other than in religious studies, most teachers do not know how to integrate faith and Christian values into their subject matter. Very few have had their education in Adventist institutions and there is no distinct preparation and training for teachers teaching at Adventist schools. The school board should look into the possibility of an additional training for teachers willing to teach at an Adventist school prior to their being hired.

An appropriate curriculum extension with adequate literature in the German language needs to be developed. In the German Adventist school where I teach, only one school book is available in the area of science dealing with the subject of creation science. This fact calls for extra effort on the part of the teacher when it comes to preparing material such as teachers' manuals and textbooks for science lessons. There is a need to participate regularly in professional upgrading through denominationally sponsored workshops.

R.C. de Azevedo suggests a program to provide seminars for educational leaders and teachers and presents ways in which the positive influence of Christian education can reach the students, parents and community.

The usage of a teacher self-assessment instrument in order to measure faith and learning is discussed in the essay by C.N. Ikonne.

It is certainly a pertinent question as to whether Adventist and non-Adventist teachers employed in Adventist schools should be required to meet certain criteria in order to achieve the goal of integrating faith and learning.

Christian schools need to develop critically thinking Christians who can intelligently look at the knowledge presented and the world around them, using the wisdom and discernment of a Christian worldview rather than being mere academic consumers (A. A. Pfeiffer. 1998).

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