

Teaching Science in Secondary School

Our armies have gone into battle using the enemy's training and weapons (1 Samwel 13: 16 – 23)

Building redemption-oriented schools of excellence (Dulan, 2003), “demands the most devoted, faithful workers and the very best methods of labor, in order that a strong influence from Christ and the truth may be constantly exerted” (White, 1948, p. 721)

Teachers are called upon to influence the learner in problem solving and discovering the truths of life.

Consider the experiences of Joseph (Genesis 37 – 50) and Daniel 1 -12.

“Bring some of the children of Israel and some of the king’s descendants and some of the nobles, Young men in whom there is no blemish, but good looking, gifted in all wisdom, possessing knowledge and quick to understand, and whom they might teach the language and literature of the Chaldeans” Daniel 1:1-4.

Nebuchadnezzar required specific qualifications but did not prepare for the outcome – a people with a sound resolve for God even in fire pre-heated seven times. Daniel 3:14 – 18

Current Scenarios

Educators may be categorized as:

- a) Schooled in public schools and colleges/universities only
- b) Schooled in public schools and undertook training in Adventist colleges /universities
- c) Attended Adventist schools and undertook professional training in public colleges/universities
- d) Attended Adventist schools and undertook professional training in Adventist colleges/universities

Picture a student handled by all these teachers in various subjects/one subject in a period of normally four – six years

What is the probability that these teachers will have a similar philosophy of life/world view?

A **teacher** is an adult with professional qualification employed to teach an approved curriculum in a school or equivalent setting

To the student, the teacher is the medium through whom the knowledge gaps of life are filled

The curriculum brings both the teacher and the student together through achievements/development of skills and attitudes.

Such teachers can be employed by the Seventh-day Adventist church to teach the national curriculum.

They will surely achieve the goals of the national curriculum even without a vague understanding of the mission of the SDA church.

Who is an Adventist teacher?

An **Adventist teacher** is a **missionary** called, trained and engaged in fulfilling the mission of the Seventh-day Adventist church through value-added teaching of the national curriculum, purposing to restore the image of the Creator in the learner . Teaching is evangelism and the teacher is accountable to God

The teacher and the student meet at the cross and enjoy their fellowship with the reward of eternal life in heaven with God

This teacher significantly achieves the goals of the national curriculum and God's purpose for **setting up schools as centers of influence**

The Greatest Want of the World

“The greatest want of the world is the want of men –

men who will not be bought or sold,

men who in their inmost souls are true and honest,

men who do not fear to call sin by its right name,

men whose conscience is true to duty as the needle to the pole,

men who will stand for the right though the heavens fall”

Education, E G White, pg 57

Report card to the Parent - God

Using the national curriculum (compartmentalized in the mind of the teacher) as subjects

Processing the raw material - the student

What is the product?

- ✚ reproduce the notes with terrible exactness
- ✚ pass national examinations with flying colors
- ✚ move into careers with anticipation of “highest paying jobs”
- ✚ living without values

How can we describe such a product?

On the other hand, our teaching **MUST** target to point our students to God the creator and Christ, our redeemer:

Albert (2003); When Paul says that we live and move and have our being in God (Acts 17:28), he implies that God is active in both teaching and learning. These activities do not happen simply because of “natural law” and human ingenuity. Teaching is done by God, either directly or through an agent.

Learning is enabled by God.

Teaching should always seek, and learning should always involve a response to God. Exodus 31: 2-6 *“See, I have called by name Bezalel the son of Uri, son of Hur, of the tribe of Judah, 3 and I have filled him with the Spirit of God, with ability and intelligence, with knowledge and all craftsmanship, 4 to devise artistic designs, to work in gold, silver, and bronze, 5 in cutting stones for setting, and in carving wood to work in every craft 6 And behold I have appointed with him*

Science

1.the intellectual and practical activity encompassing the systematic study of the structure and behaviour of the physical and natural world through observation and experiment.

The subjects that make science in secondary schools include

1. Biology
2. Chemistry
3. Physics
4. Others : mathematics, geography and home science

Philosophy of Science (PoS): (World view)

Theories and laws, explanations, justifications with respect to properties of matter in the physical world

- ✓ what are scientific theories and laws?
- ✓ what is a scientific explanation?
- ✓ are scientific claims justifiable or falsifiable?
 - how do scientific theories change?
 - how are old and new theories related?
 - how are theories of different fields related?

Sample Philosophy of Chemistry from the Adventist worldview (1/3)

Chemistry is the branch of science concerned with the substances of which **matter is composed**, the investigation of their **properties and reactions**, and the use of such reactions to form new substances. Chemists study elements of both biophysical and built environments. In Adventist secondary schools, the study of the natural environment assumes the existence of a **Creator-God who has created all existing matter**. **The starting point of chemistry knowledge is thus the act of creation**. Through studying this creation students are taught to appreciate not only its aesthetic beauty, but also the need to live in harmony with its Creator's laws. Students also examine dramatic changes in the environment with the assumption that many of these changes have been caused by the intense conflict between good and evil which is the result of people's separation from God (Sin).

Sample Philosophy of Chemistry from the Adventist worldview (2/3)

Because Christian chemists assume the existence of God, they **reflect on their Relationship to God** as they study chemistry. It follows that their study of the environment should **lead to a heightened awareness of their responsibilities in caring for their created environment**. Humans have induced changes in that environment. Some of these have been negative changes which are ultimately from the effects of sin. The environment, therefore, has been partially destroyed because of the alienation of humans and nature after sin entered the earth (Revelation 11: 18). The study of chemistry in Adventist schools will emphasize the importance of the **concepts of restoration (re-creation) and stewardship (sustainability)** (Ezekiel 47:12). ‘Stewardship’ or ‘earthmanship’ are terms conveying the idea that for the sake of both their own and future generations people should carefully preserve and wisely manage their environmental resources.

Sample Philosophy of Chemistry from the Adventist worldview (3/3)

Students should be taught to **respect and maintain the quality of the natural environment, and to promote the physical and spiritual welfare of the humans in that environment.** The concept of stewardship contains the idea that chemistry education should strengthen students' desire to be of service to the community (careers) and to people (values and relationships) in general. Students serve by accepting community responsibilities, by preserving and improving the environment, and by finding practical ways to help those in need. They develop their Christian commitment by pursuing responsible and unselfish patterns of action.

(Adapted from “A Curriculum Framework for Seventh-day Adventist Secondary Schools, 2nd edition, 1997”)

- https://www.adventist.education/resources/#reference_materials
- Adopted from George Oromo, unpublished presentation

Discussions

In groups per subject, discuss:

1. To what extent have you taught your subject from the Adventist philosophy/worldview?
2. Draft and share with the class your subject philosophy