
Pro Rege

Volume 12 | Number 4

Article 3

June 1984

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Reynolds, Larry (1984) "Describing Instruction: Basic Assumptions," *Pro Rege*: Vol. 12: No. 4, 12 - 24.

Available at: https://digitalcollections.dordt.edu/pro_rege/vol12/iss4/3

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Describing Instruction: Basic Assumptions

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Introduction

A great deal of educational literature has dealt with the topic of instruction. A review of the literature, however, finds that most often such literature assumes a definition of instruction that is almost as broad as education itself. Instructional methodology, models of curriculum development, developmental theory, learning theory—one of these educational topics becomes the central focus of the article, chapter, or book with “instruction” in the title. Even those articles which attempt to restrict their focus to the instructional process itself seldom address foundational questions concerning the nature of instruction. Professional dialogue among Christian educators in reformed circles has focused almost completely on

defining a philosophy of education and a theory of curriculum development, with the implicit assumption that once those two areas are refined, instruction and learning theory will fall into place.¹ I believe that Christian scholars must attempt to formulate both a theory of instruction and a theory of learning in order to work out adequately the educational implications of a Christian philosophy of education. In this article I will attempt to establish a basis for articulating a Christian theory of instruction.

To help explore the contours of a theory of instruction I will introduce eight vignettes on instruction. While these vignettes do not exhaustively explore instruction, they will attempt to expand the concept of what instruction is and what should be the ultimate goal of instruction. The vignettes will also

provide a specific frame of reference for the rest of the article. Following the vignettes, I will review what has been written about instruction and the technological direction theorizing on instruction has taken. I will then summarize two Christian critiques and analyses of the technological process—a process that is giving direction to and shaping instructional theory. I will use those critiques to explore basic assumptions about instruction that are based on a theory of instruction that attempts to see instruction in the context of the creation, fall, and redemption. And finally, I will return to the vignettes to examine their relationship to the basic assumptions about instruction that have been explored.

Eight vignettes on instruction

Five kinds of instruction:

1. Dan Hamilton holds the hand of his frightened daughter during a thunder and lightning storm. The sky lights up and, unlike the best moonlit, cloudless night, both Dan and his daughter Karen see the watertower in the town twenty miles away. "It's quite a light show, Karen, when God lets you see the Newberg tower from here at night," Dan says with a sense of awe and fascination in his voice. "It's almost like daytime," she replies, a little less afraid.

2. That same night Paul Brighton displays a proud smile of ownership as he shows his new Minolta camera to his friend Ed. It was Ed and his bedroom wall of black and white prints he had taken himself that inspired Paul's purchase. "My luck," Paul moans, "a storm to foul up my first night as a photographer." "One of my best prints is of the silhouette of a barn with lightning making a fireworks display behind it," Ed replies. "I wouldn't know how to set the exposure and speed for a shot like that. Could you help me out?" The rest of the evening is spent with Ed sharing his expertise with Paul.

3. The next day Mr. William Jordan quietly announces to his home room class that Tom Hendricks will not be in school for a few days. His father was killed by lightning as he was repairing a fence during last night's storm. After opening in prayer with a special plea for God's comforting grace for the Hendrick family, Mr. Jordan sits down at his desk and Dick Wilson notices that tears are running down his face. That Mr. Jordan in physics the day before has talked about the electrical properties of lightning contains no irony for Dick. He will never forget this moment, however.

4. That same day at the edge of a forest, Mrs. Johnson is leading her biology class on another field trip. She is typically adorned with a Sherlock Holmes hat on her head and magnifying glass in hand. The class is examining the charred remains of fifty to sixty trees, the result of the previous night's lightning storm. A student asks why the fire did not spread to the rest of the forest. Raising the magnifying glass to her eye and gazing off in the direction of the unburnt forest, Mrs. Johnson states, "We've got a mystery here, my dear Watsons. I'll give you one clue: a forest fire swept through the area 40 years ago." Several more questions are asked and each time the teacher turns the question around and challenges the class to find answers.

That night Jim Henry, a high school biology student, reads about forest fires that last for days because the fire goes underground into the peat build-up, smoldering and retaining combustible heat that can burst into flame when it surfaces and makes contact with an oxygen source, sometimes hundreds of feet from the original fire. The burnt out peat serves as a fire line for future fires. The next day in class the student argues against the arbitrary prevention of all forest fires. Mrs. Johnson is delighted.

5. Susan Matter takes down notes in her computer-math class. Mr. Robert Caine has

announced at the beginning of class his two objectives for the day: that every student be able to demonstrate three ways a program could be written to determine the probability of an occurrence, and that every student be able to generate a probability problem and write a program to answer that problem. Susan thinks about the probability of being struck by lightning. Mr. Caine sure wouldn't use such a relevant example like that, she thinks; besides today with the death of Tom's dad, it would be in poor taste. Susan appreciates Mr. Caine, however. He is always organized and he sincerely tries to help each student (if making a responsible effort) reach a minimum level of mastery that would enable the student to be proud of what is accomplished. Mr. Caine has not only designed this advanced course for mathematically gifted students, but has argued strongly for less theoretically stringent courses for less capable students. Susan does think Mr. Caine's examples are always oddly chosen. Today they will be computing the probability of wide-spread starvation in some make-believe country in Africa. Mr. Caine has given them a ten year statistical summary of weather conditions, tribal wars, and government trade policy. Susan wonders who cares. Somehow she feels that Mr. Caine does.

Three follow-ups twenty years later:

6. Karen Hamilton sits calmly in front of the patio sliding-glass doors holding her nine-month-old son on her lap. Lightning dances across the sky followed by loud claps of thunder. She hums the tune of a childhood lullaby. The baby's eyes follow the streaks of lightning and he claps his hands after each sound of thunder.

7. Jim Henry is a bit nervous about his appearance before the committee hearing of the Department of Interior. Even though he is a full professor of forestry at a major west-coast university, he is intimidated by the "big guns" from the lumber industry who

will be countering his testimony. The Department of Interior is seriously considering relaxing its policy concerning the cutting of virgin timber. The industry has argued that it's an economic waste to let virgin timber die of old age and rot unused in the forest. Jim smiles as he recalls his emotionally charged plea in Mrs. Johnson's class to let naturally caused fires burn out large cumulations of peat. While he hasn't dramatically changed his stand on forest fire control, today he'll be arguing that peat build-up due to the death and decay of trees be allowed to occur. He will have to provide specific evidence on how the relaxing of present rules will have an impact on the survival of wild life and on the erosion of soil. Before he leaves for the hearing Jim prays that he may speak with wisdom. Now retired, Mrs. Johnson has read about Jim's forthcoming appearance before the Department of Interior. She praises God for Jim's opportunity and humbly thanks him for revealing a sign of the success of the Christian instruction in which she was a part.

8. Susan Matter reviews the report she is to present to the executive meeting in the afternoon. She liked the challenge of her first assignment as a vice president of a multinational company. She is still nervous, however. A Third World country's government has made an attractive offer to relocate a food processing plant in their country. She was to organize a research team of 20 staff members to make a recommendation as to whether to accept the offer. There were many variables to consider in order to determine the probability of success. She is thankful for the computer as a tool to handle the data that the research team gathered. The staff has done its work well and the computer programmer has done an excellent job of graphing the total impact of the move. The report goes beyond the probability of financial success, however, and that's why she is nervous. The report considers the labor intensity of the new

equipment that will be installed, the impact on agricultural trends and the survival of the small family farms, and the political consequences of enhancing the financial power of a government already insensitive to issues of justice and human rights. The report does show that the probability of a significant increase in profits over a ten year period make the re-location from strictly a business-economic point of view a valid move. Yet she is recommending a negative response to the offer, and she prays and hopes that her appeal to global corporate responsibility will not sound like a sermon. She is afraid the response might be "who cares"; she cares very much.

What has been written about instruction and the direction it has taken

Actually in comparison to other areas of educational psychology little has been written on theories of instruction and most of what has been written has been written in the last two decades. N.L. Gage² in the 1964

tion should take place.³ Gage contends that one could make an equally strong case for learning being a dependent variable of instruction, and with a simple string of analogies, makes his case for the importance of a theory of instruction:

Farmers need to know more than how plants grow. Mechanics need to know more than how a machine works. Physicians need to know more than how the body functions. Teachers need to know more than how a pupil learns.⁴

Gage also proposes that the scarcity of literature on instruction stems from the debate whether teaching is an art or a science. The fear that viewing teaching as a science would reduce the teacher to an automaton has restricted the dialogue on instructional theory. Some argue that because teaching is an art, theoretical analysis is impossible. Gage counters that even the artist is subject to an order and lawfulness in his work that

In spite of the problems in instructional research and the differences in the instructional models that have been generated, there seems to be a common direction that instructional research is taking.

yearbook of the National Society for the Study of Education attempts to account for this paucity of literature on instructional psychology. A major factor, he contends, is the presumed adequacy of a theory of learning. Instruction is seen as a dependent variable of the learning process, and consequently a well-articulated theory of learning will necessarily imply what kind of instruc-

tion can be the legitimate concern of scientific investigation—without denying the complexity of the artistic process and without hindering the artist.⁵ What Gage fails to recognize is that this debate is part of a larger philosophical debate that must be resolved before an adequate theory of instruction can be constructed. It is the debate that focuses on humankind's freedom and responsibility

versus natural determinism and authoritarian control.

What has been written on instructional theory, however, does tend to deny the *art* of teaching and to reduce instruction to a very mechanistic and deterministic process. Even Gage's own definition of a theory of teaching leans in this direction:

That is, theories of teaching should be concerned with explaining, predicting, and controlling the ways in which teacher behavior affects the learning of pupils.⁶

Other definitions given by other instructional theorists are similar. Robert Glaser, who has extensively reviewed the literature on instructional psychology, has constructed a definition of a theory of instruction that parallels Gage's definition:

A theory of instruction. . . is concerned with the design of conditions to bring about certain events. It is a normative theory that sets up a criteria of performance and specifies optimal conditions for meeting them.⁷

And his goal for instruction reinforces the same mechanical and technical approach to the teaching process:

A significant last, then is for instructional theory to develop optimizing methods and models for the acquisition of complex domains of knowledge and skills.⁸

The results of the research that has been done on instruction have been discouraging. Many models and techniques have been introduced,⁹ but with inconclusive results.¹⁰ There is little evidence that one method of teaching is actually superior to any other method. Those who prefer viewing teaching as an art might cynically advocate that the best insights that one could derive from such research are the results of effectiveness

studies based on student ratings. These studies have produced a list of characteristics which students stated were the earmarks of a good teacher: dynamic, energetic, explains clearly, interesting style of presentation, seems to enjoy teaching, genuine interest in students, friendly toward students, encourages class discussion, and discusses points of view other than his own.¹¹ But such a list, in spite of its alerting teachers to those qualities which will contribute to what Bruner calls a "predisposition toward learning,"¹² is of questionable scientific validity (because of the self-reporting nature of the research) and tends to reduce instruction to a sociological relationship (how the teacher relates to the student).

Other problems have been recognized by the researchers on instruction in addition to the inconclusiveness of most studies. Most research has been conducted within a very restricted time frame. Glaser notes,

. . . most learning theories to date have been based on investigations of time spans that are long enough for experimental convenience and not long enough to consider the extensive periods of acquisition—many hours and years of learning and experience—that are required in real life to attain high levels of skill.¹³

There has also been little account of individual differences in instructional research.¹⁴ In an attempt to formulate general laws for instruction, both the individuality of the student and the individuality of the teacher have been neglected. Many problems have resulted from a lack of precision in defining what is being studied. "Instruction" like "teaching" has become a generic term¹⁵ as broad and scientifically elusive as education itself (as I noted in my introduction to this article). Because of the failure of research to be precise and to recognize the limitations of its focus on some aspect of the generic term instruction, instructional research has often failed to account for all the variables involved

in the complex instructional process.¹⁶ There is also the unresolved tension between student freedom and the authority of the teacher.¹⁷

In spite of the problems in instructional research and the differences in the instructional models that have been generated, there seems to be a common direction that instructional research is taking. Most instructional theorists have assumed that instruction is a technological process and that given time, a technology of teaching or instruction will be adequately defined. Although assuming this united direction, few instructional theorists have addressed the questions of what is the nature of technology, what are its limitations, and what philosophical assumptions are involved in reducing instruction to a technological process.

Two Christian critiques and analyses of technology

Two twentieth century Christians, Jacques Ellul and Egbert Schuurman, have written penetrating critiques and analyses of technology.¹⁸ Not only does their work help one to understand the direction instructional research is taking and the resulting dangers, but Schuurman in *Technology and the Future* provides a theoretical basis for defining a Christian theory of instruction.

Jacques Ellul is scathing in his critique of modern technology and how it has come to dominate twentieth century civilization. By placing its faith in technology, humankind has allowed technology to have its own identity. Technology has become absolutized and human beings have become its loyal, dehumanized subjects.¹⁹ The terrible results of the domination of technology are evident everywhere. It has caused the breakdown of community. Instead of communities of human beings sensitive to meeting each other's individual needs, there are now mass societies in which all individuals must submit to the technological laws that govern such societies.²⁰

The techniques that are produced by modern technology have reduced human beings to objects, while giving human beings the illusion of controlling their own lives. "Man feels himself to be responsible, but he is not. He does not feel himself an object, but he is."²¹ Education, according to Ellul, has been dominated by techniques and the modern classroom has become one more example of human engineering.²²

The clock (analog or digital) for Ellul symbolizes humankind's enslavement to technology. Time is no longer measured by life's needs and events; no longer do human beings guide their time in correspondence to nature's time. Time instead has become quantified, an abstract measure that is separated from natural cycles and the rhythms of life. "Today the human being is disassociated from the essence of life; instead of living time, he is split up and parceled out by it."²³ One is uncomfortably reminded of the typical school day parceled out by bells and the teacher's manual which splits the lesson plan into two to five-minute segments.

Ellul offers no real solution to the problem of technology. His main goal in publishing his critique is to wake up society so that humankind will seek ways to resist and transcend technology's present deterministic course.²⁴ Ellul leaves the impression that humankind and technology must be at odds; in fact, humankind's survival depends on this adverse relationship. In focusing on the dangers of modern technology Ellul fails to see technology as a legitimate part of God's creation and humankind's task in that creation, but instead sees humankind's participation in technological development as basically evil. There seems to be an inherent tension between technology and Christianity and between technology and humankind's religious freedom.²⁵

Egbert Schuurman, while he agrees with Ellul's condemnation of the direction that technology is going, sees technology in the context of "God's mandate to man to unfold the creation and make and keep it livable."²⁶ He is careful in his critique to distinguish

between the intended use of technology and its present misuse. Schuurman, like Ellul, feels technology has become absolutized and its limits ignored. He too is critical of the faith people have placed in technology: "Technology was expected to deliver what it never could: the redemption of life."²⁷ Within the development of modern technology there has been no understanding of humankind's God-given task to use technology to give shape to creation, and no acknowledgement that humankind can only respond obediently to this task through the redemptive grace of Jesus Christ. There has also been, according to Schuurman, a failure to recognize technology's relationship to all other dimensions of reality.²⁸ Technology has instead been reduced to a purely analytical activity in which abstract, scientific knowledge is viewed as reality itself.²⁹ This scientific reductionism has excluded the use of imagination and fantasy in technological development.³⁰

For Schuurman, however, there is a proper, intended (created) use for technology. Technological development does not have to be a curse on humankind's existence. Simply stated, technology for Schuurman is a formative human activity in which "people give form to nature for human ends with the aid of tools."³¹ It is an activity of intentionally giving form and design. Technology is humankind obeying the cultural mandate by developing and unfolding the richness of creation.

Being busy with technology should mean being busy serving God. This requires the rejection of every form of autonomy and the acceptance of the status of the bond-servant.³²

Technology must, however, recognize its own limits in giving shape to creation. In giving shape to objects in creation, technology is limited by the very laws of creation and by the complexity of creation. This complexity necessitates what Schuurman calls multidisciplinary cooperation.

Multidisciplinary cooperation requires insight into the limitations of one's own knowledge, a capacity to listen and to cooperate, and responsible attitudes toward the achievement of compromises acceptable to all.³³

Technology is also limited by the finite character of the human beings involved in designing and implementing change in creation. Humankind's fall into sin continues to cause distortions in its use of technology.

Technology is especially limited when it involves formative action toward human beings. Whereas human beings may treat non-human structures in creation as objects, human beings must view their fellow image-bearers as "co-subjects."³⁴ Formative activity, when it involves human beings, must insure their freedom to respond obediently (or disobediently) to God's creation. They are never to be viewed as objects to be manipulated.³⁵ The complexity of creation which limits humankind's technological working with objects of creation impinges itself even more dramatically in limiting humankind's understanding of and influencing of fellow human beings. Unlike the rest of creation, human beings exist in a heart-directed relationship of obedience or disobedience with their Creator. But for the redemption of Jesus Christ and the power of the Holy Spirit, sin would totally distort humankind's response to its God-given task in creation. Scientific observation and theorizing can never account for all that's involved in any action of a human being living before the face of his or her Creator-God.³⁶

Instruction: a definition, parallel dangers with technology, and basic assumptions

The importance of examining the formative nature of technology is that instruction is a formative activity—an activity in which people purposefully lead other persons from one level of ability to respond obediently to God's creation to another level of ability to respond. As technology in-

volves human beings in exercising authority over creation, instruction involves human beings exercising authority over fellow image-bearers so that they too can participate in understanding and developing God's creation. While instruction takes place in a variety of forms and by an infinite variety of people (as my vignettes at the beginning of this article illustrated), instruction is what makes a school a school. Calvin Seerveld states this nicely in *Rainbows for the Fallen World*.

The core of a school, one could say, is the teacher student pedagogical relationship exercised in a community of trust.³⁷

Stuart Fowler focuses on the concept of "pedagogical power" as the core of the educational community:

. . . the school, in its fundamental structural character must be defined as the organization of pedagogical power in a community of teachers and students united by a moral bond of commitment to learning.³⁸

As a formative activity it shares the same dangers and limits that technology does. Instruction can easily become a matter of manipulative techniques in which the learner becomes an object. As an object of manipulation, the learner loses the freedom to make an authentic response to serve God in his creation. Instruction that focuses on manipulating individuals causes a breakdown in community. Often instruction fails to do justice to the complexity and wholeness of the image-bearer who is being influenced and often instruction fails to recognize its own limitations. These dangers increase the significance of Christ's warning about leading children astray (Matt. 18:5) and James' warning that teaching is an awesome responsibility (James 3:1).

To avoid these dangers, we must establish some basic assumptions to enable us to

theorize about instruction in such a way that the formative nature of instruction is seen as a positive response to God's calling to instruct our children and each other in the way of the Lord.

Instruction has the goal of increasing one's ability to respond to God's creation. That response can never be reduced to just an increase in cognitive knowledge of creation and/or an increase in skill development. A biblical view of knowledge must shape our understanding of the task of instruction. In the scriptures knowledge always involves responsible action. Knowing and doing are inseparable. True knowledge is responding obediently to our God-given task in creation.³⁹ It is interesting to note that one of the Hebrew words for instruct or teach, *sâkal*, involves the concept of helping one to act in wisdom. This meaning comes through in the Psalmist's use of the word in Psalm 32:8 "I will teach you, guide you in the way you should go."

Simply stated, the goal of instruction is discipleship. This is not to assert that discipleship is possible without an awareness and understanding of God's creation—an awareness and understanding that will often involve the mastery of many skills and concepts—but skills and concepts must always be handled in the context of God's creation and our unique task in creation. Neither is our response shaped just by cognitive knowledge or skill development. Our experiences shape our ability to respond, especially the relationship experienced between instructor and learner. The imagination, our ability to engage in fantasy, and our ability to use metaphorical images, are as essential to instructional formation as Schuurman argues they are for technological formation.⁴⁰

Instruction gives the teacher pedagogical authority in which one person is going to exercise influence and leadership over another. Authority doesn't focus on only power; it is a combination of both dominion (Ps. 8—our authority given by God over creation) and service (John 13:12-17). The

same self-perception that Schuurman argues for those involved in technological forming is important for those involved in instructional forming: that of being bond-servants. Indeed, the very modelling of servant leadership and discipleship⁴¹ is an instructional process that should result in graduating students who are truly bond-servants of the Lord. In that sense pedagogical authority is also aimed at students assuming a role in which they outgrow their dependence on the instructor. Seerveld thus claims that the final step of instruction is experimentation.

. . . because teaching like friendship is a reciprocal relation, the teacher must interact with the student and, if it is right, respond intimately to the student's first pathfinding footsteps in a way that respects the student individually in their communal enterprise.⁴²

Stuart Fowler worries about the concept of pedagogical power being confused with a kind of manipulative authority and argues that the authority of a teacher is limited to that of pedagogical authority:

On the contrary, if my present analysis is accepted, it becomes clear that authoritarianism is an aberration in defiance of the normative structure of the school. This is so because the authoritarian teacher, losing sight of the pedagogical qualification of the power of his office, tries to exercise an unqualified, arbitrary power which he supposes attaches to his office as teacher. In so doing he tries to substitute the unifying power of an arbitrary authority for the moral bond of commitment to learning that is the real unifying force in the school community. The true authority of the teacher in the school is a qualified authority, pedagogical in character, an authority to lead in the learning activity.⁴³

We must be careful, however, to recognize that teachers assume the power of three kinds of authority: 1) pedagogical authority, 2) delegated parental authority, 3) institutional authority. Parents are given the responsibility of bringing up their children in the nurture and admonition of the Lord. However, as we developed God's creation and differentiated between tasks that by their specialization could enable us to increase our ability to serve our Creator, parents delegated part of this authority to the school (in the same way they delegated the authority of medical caring to a medical clinic). Because the teacher assumes the place of the parent for the child during the time of instruction, it is impossible to limit that authority only to pedagogical authority.⁴⁴

Schools also are institutional structures, subject to the norms of all institutions. The very structure of an institution with its complexity demands levels of responsibilities and authority. Schuurman recognizes this when he writes,

Within any given relationship, be it a family or a school, a business or an engineer firm, the normative structure for leadership on the one side and subordination on the other is meant to serve a healthy unfolding of life. When the normative structure is not acknowledged it will inevitably assert itself in a corrupted fashion, either as dictatorship or as anarchy.⁴⁵

Teachers must assume a role of authority within that structure that places responsibility on them for the functioning of the institution in the area of instruction. This authority is exercised for the benefit of the students and should be exercised in the context of servant leadership, never becoming manipulative or arbitrary. But neither should institutional authority and delegated parental authority be abrogated. Pedagogical authority, while it is the central focus of the school, cannot exist in an

educational institution *for children* without the other two kinds of authority.

Teachers should also be aware that they can abdicate and/or delegate their pedagogical authority to other sources of instruction. Textbooks and computer software are often examples of unhealthy abdication and delegation. There should be a reluctance to turn that authority over to just any source that happens to be closely related to the area of instruction being handled. A thorough examination of the confessional stance of the author(s) should be a prerequisite and those that assume a "neutral" stance should be regarded as suspect.

Instruction involves the relationship of two image-bearers of God (Schuurman's "cosubjects") and should insure the freedom of both to be able to respond obediently to God's calling to love and serve him. Both are under God's law and hold a unique place as subjects in God's creation with the God-given task of developing that creation. That task is to be done in community (I Corinthians 12) with all members realizing their high calling in Christ Jesus (Phil. 3:14). The teacher and learner are part of concentric communities. They are part of a community of believers (or unbelievers), part of an educational community, and part of a community of teachers or students. It is important to remember that both the teacher and the learner live out of a dynamic confessional stance. When the instructor and student have opposing confessional stances, tension will arise, and for any adult, may completely minimize the effects of all instruction and result in a breakdown of community.

Both the teacher and learner are complex beings. Human beings have many dimensions (artistic, social, biological, emotional, etc.) and yet must be viewed as even more than the sum of these dimensions. This doesn't mean that we shouldn't explore these dimensions individually, for such research and exploration is part of our task as human beings in God's creation. The results of such study should increase our understanding of

the complexity of humankind. Our research, however, should involve Schuurman's idea of multidisciplinary cooperation and should always come back to seeing that dimension of a human being as an integrated part of a holistic image-bearer of God.

Both the teacher and learner exist in an historical context which involves both the instructor and learner in a continual process of development. The influence of one person over another is dependent on doing justice to the stage of development that the learner is in. Instructors, too, must recognize that they constantly are growing in their understanding of God's creation and are confronting new historical situations in which they are called to serve their Creator. They should never reduce instruction to "replaying" what they "know" about creation.

Instruction must acknowledge the reality of sin, Christ's redemption, and the power of the Holy Spirit. Humankind's task to give shape and meaning to creation and nurture others in that task became distorted with humankind's fall into sin. Without Christ's redemption and the power of the Holy Spirit, humankind will continually flounder in its attempt to work out a meaningful existence in God's creation. It is interesting to note that one of the Hebrew words for instruction seems to recognize that Christian nurture always takes place in the context of a world in which sin mis-directs all of humankind's actions. *Yâcar* has in its root meaning "to chastise" or to chasten or correct. We find *yâcar* in Deut. 4:30: "From heaven he let you hear his voice for your instruction." The summary of this instruction follows in Deut. 5 with the giving of the law. The ten commandments instructed or re-directed the Israelites in a way of life in which God's people could experience the rich blessings of living in his creation—a way of life they were prevented from living during their Egyptian captivity.

Robert Boelke, a Christian existentialist, powerfully describes the human condition of sin in *Theories of Learning in Christian Education*:

This means man cannot restructure his field of relationships to fulfill their proper purposes. His perceptual processes are included in his alienation from God. If man is to learn and to come into his full humanity, he must be empowered by the Holy Spirit.⁴⁶

It is the Holy Spirit, Boelke writes, that gives human beings back their liberty to carry out their task in creation. The Holy Spirit determines whether Christian nurture takes place or not.⁴⁷ Boelke acknowledges that our theology of the Holy Spirit has been so abstract and other-worldly that we have reduced his role in developing a theory of Christian nurture to an afterthought. The Holy Spirit is merely the one who makes such nurture possible. He writes,

Because it is difficult to define the Holy Spirit operationally, he is relegated to an insignificant place in the day-to-day aspects of Christian nurture where learning is expressed at the level of instruction. If the Holy Spirit is the effector of learning in Christian nurture, then provision must be made for his action at every point in the learning process.⁴⁸

In describing education as formation and power, Albert Greene also confirms the importance of the Holy Spirit in instruction:

Education is formative. It results in growth within the student's life, growth which issues in a maturing ability to engage actively in each life-opportunity so as to serve God there. The fruits of the Holy Spirit should be evident if the formative norm is being implemented.⁴⁹

Evaluation of instruction must account for the ultimate goal of instruction—that of nurturing disciples for Christ. Evaluation cannot be reduced totally to short-term test results but must account for the learner's

response to God's creation. Another Hebrew word for instruct or teach captures this idea. *Yârâ* contains the idea of determining the direction or flow of something, such as shooting an arrow. When the Psalmist prays "Teach me thy way, O Lord; I will walk in thy truth" (Ps. 86:11a), "teach" implies that the "learner" will be guided in a certain (life) direction—that of responding obediently to the task to be performed in creation.

Because of the fall and the history of humankind's disobedient response to creation, an obedient response to God's creation involves radical discipleship and a lifetime commitment to radical discipleship. It is the kind of discipleship that according to the account in Acts turns the world upside down (Acts 17:6). If such radical disciples for Christ are not products of Christian instruction, Christian education has failed no matter what successes it might claim in the public market place.

The vignettes re-visited

In order to give more specific and concrete meaning to some of the observations I have made about instruction as a formative activity, let's re-examine the vignettes that I have given on instruction and its results.

The vignette of the father commenting on God's light show during a thunder and lightning storm not only demonstrates what we all knew before reading this article—that instruction is not confined to the classroom—but demonstrates that instruction is directed toward more than cognitive mastery of a new concept or the acquisition of a new skill. It is Dan's own response to God's power in creation that shapes Karen's response to future storms and allows her twenty years later to instruct her son about God's creation in a very quiet and unassuming way. In Reformed communities we have sometimes implied that the most important task for Christian educators is to articulate (usually theoretically) the Christian perspective from which they teach their subjects. Without

denigrating the importance of working out a conceptual framework for teaching about various aspects of God's creation—a framework which reflects our understanding of creation, fall, and redemption—this vignette attempts to stress the equally strong importance of the teacher's own personal spirit-filled response to God's creation.

The evening photography workshop with Ed and Paul is an example of instructional authority without the complexity of delegated parental authority and institutional authority. This vignette perhaps illustrates a kind of instruction that should be as characteristic of the Christian community as that instruction which takes place in a school setting. Christians within the Christian community should constantly be placing themselves in subjection to the instructional authority of others who can help them in their calling to be Christ's disciples.

Mr. Jordan's reaction to the death of Tom's father has a profound effect on Dick Wilson. There is what Seerveld calls a "pedagogical bond"⁵⁰ between Mr. Jordan and Dick. Dick sees all of Mr. Jordan's teaching in the context of a holistic Christian whose interest in the physical properties of God's creation are not divorced from his sensitivity and compassion for fellow brothers and sisters in Christ. A new interpersonal dimension will make the instruction from now on in Mr. Jordan's class significantly different for Dick.

The unconventional Mrs. Johnson (alias Mrs. Sherlock Holmes) with her imaginative teaching style and desire to have students confront the primary source of biology—God's creation itself—has inspired many of her students to continue their studies in biology or related fields. It would be hard to reduce her instruction to a lesson plan or list of objectives. Many of Mrs. Johnson's students have pursued their interest in living things by self-instruction as Jim Henry did that one night as he read about the prevention of forest fires, but like Mrs. Johnson, they have learned to try the spirits of secondary sources. The Lord

doesn't always provide us with concrete examples of the fruits of our instruction, as the case with Jim's being able subtly to urge policy makers to be good stewards of God's creation. More often we are forced to trust without evidence the power of the Spirit to work in the lives of our students.

Susan Matter obviously benefited from the organized, objective-based instruction of Mr. Caine. The skills she developed in his classes contributed to her gaining her position as a vice president of a multinational corporation. While it is impossible to say that Mr. Caine is solely responsible for Susan's life-long commitment to Christian discipleship, he was a significant part of the total Christian community's effort to help Susan grow in her ability and commitment to serve the Lord in all of life. No Iowa Basic Skills, SAT, or ACT test, could have tested the success of that instruction at the end of a semester or school year.

Conclusion

Christian schools place teachers in positions of pedagogical power to shape the lives of children for life-long service to their Creator. Such instruction is a complex formative process—a process about which there is little clear definitive understanding. Most of what has been written has focused on the bits and pieces of instruction, and this article has only scratched the surface. To be understood, instruction still needs further elaboration and study. More discussion is needed on the nature of formative activity, be it technological or instructional. More questions need to be asked on what is the creational context of formative activity. How does formative activity depend on some dimensions of creation, and how does formative activity relate to all dimensions of creation? What is obedient formative activity and disobedient activity? I hope this article promotes a healthy and fruitful dialogue that will produce greater understanding and refinement of an activity that is of fundamental importance to the Christian

community as it attempts to work in God's creation and bring healing to a broken world.

Endnotes

¹Even Jan Waterink's *Basic Concepts in Christian Pedagogy*, (Grand Rapids, Michigan: Wm. B. Eerdmans Publishing Co., 1954), while its title implies a focus on instruction, is a generalized theology and philosophy of education.

²N.L. Gage, "Theories of Teaching," in *Theories of Learning and Instruction*, National Society for the Study of Education, (Chicago, Illinois: The University of Chicago Press, 1964), pp. 268-285.

³Gage, pp. 271-272.

⁴Gage, p. 273.

⁵Gage, p. 270.

⁶Gage, p. 272.

⁷Robert Glaser, ed., *Advance in Instructional Psychology*, Vol. 1, (Hillsdale, New Jersey: Erlbaum, 1978), p. 514.

⁸Glaser, *Advances in Instructional Psychology*, p. 514.

⁹For an extensive bibliography on research in instructional psychology see the bibliography following Robert Glaser's "Instructional Psychology: Past, Present, and Future," *American Psychologist*, 37, (March, 1982), pp. 292-305.

¹⁰William W. Codey, and Gaea Leinhardt, "The Instructional Dimensions Study," *Educational Evaluation and Policy Analysis*, 2, (Jan.-Feb. 1980), pp. 7, 22, & 23.

¹¹Richard I. Miller, *Evaluating Faculty Performance*, (San Francisco: Jossey-Bass Publishers, 1974), p. 24.

¹²Jerome G. Bruner, *Toward a Theory of Instruction*, (New York: W.W. Norton & Co., Inc., 1966), pp. 42-43.

¹³Glaser, "Instructional Psychology: Past, Present, and Future," p. 301.

¹⁴Glaser, "Instructional Psychology: Past, Present, and Future," p. 302.

¹⁵Gage, p. 274.

¹⁶Gage, p. 274, and Cooley and Leinhardt, p. 23.

¹⁷For example see R.C. Atkinson, "Ingredients for a Theory of Instruction," *American Psychologist*, 27, (1972), p. 903.

¹⁸Jacques Ellul, *The Technological Society*, (New York: Alfred A. Knopf, 1967), and Egbert Schuurman, *Technology and the Future*, (Toronto: Wedge Publishing Foundation, 1980).

¹⁹Ellul, p. 306.

²⁰Ellul, pp. 333-334.

²¹Ellul, p. 226.

²²Ellul, pp. 344-349.

²³Ellul, p. 329.

²⁴Ellul, p. xxxii.

²⁵For a thorough and excellent critique of Ellul see Schuurman, *Technology and the Future*, pp. 146-158.

²⁶Schuurman, *Technology and the Future*, p. 150.

²⁷Egbert Schuurman, *Reflections on the Technological Society* (Toronto: Wedge Publishing Foundation, 1977), p. 21.

²⁸Schuurman, *Reflections on the Technological Society*, pp. 341-343.

²⁹Schuurman, *Technology and the Future*, pp. 25-28.

³⁰Schuurman, *Technology and the Future*, p. 39.

³¹Schuurman, *Technology and the Future*, p. 5.

³²Schuurman, *Technology and the Future*, p. 328.

³³Schuurman, *Technology and the Future*, p. 343.

³⁴Schuurman, *Technology and the Future*, p. 149.

³⁵Schuurman, *Technology and the Future*, pp. 149 & 341.

³⁶For an excellent critique of how scientific research has attempted to reduce human beings to empiricistic data, see Mary Stewart Van Leuwen, "The Unfulfilled Apprenticeship of North American Psychology," *Christian Scholar's Review*, 11, (1982), pp. 291-315.

³⁷Calvin Seerveld, *Rainbows for the Fallen World*, (Toronto: Tuppence Press, 1980), p. 141.

³⁸Stuart Fowler, *Issues in the Philosophy of Education*, (Potchefstroom: Pro Rege, 1980), p. 54.

³⁹For more detailed discussions of a biblical view of knowledge see Doug Blomberg, "Toward a Christian Theory of Knowledge," in *No King on the Cake*, ed. Jack Mechlielsen (Mount Evelyn, Victoria: Brookes-Hall Publishing Foundation, 1979), pp. 41-59; Geraldine J. Steensma, "The Scriptural View of Knowledge and Truth," in *Shaping School Curriculum: A Biblical View*, ed. Geraldine J. Steensma and Harro W. Van Brummelen (Terre Haute, Indiana: Signal/Publishing/Consulting Corp., 1977), pp. 4-8; and John Van Dyk, "The Relation between Faith and Action: An Introduction," *Pro Rege*, 10, (June 1982), pp. 2-7.

⁴⁰See Seerveld's chapter "The Fundamental Importance of Imaginativity in Schooling" in *Rainbows for the Fallen World*, pp. 138-155.

⁴¹The words of the Apostle Paul in I Corin. 11:1 take on instructional significance.

⁴²Seerveld, p. 149.

⁴³Fowler, p. 42.

⁴⁴I realize that the phrase "in loco parentis" has taken on some very negative connotations in recent history (partly because the phrase was applied to educational institutions whose students were mostly adults), but I believe the phrase is very appropriate when talking about students who are considered to be children and not adults.

⁴⁵Schuurman, *Reflections on the Technological Society*, p. 20.

⁴⁶Robert R. Boehlke, *Theories of Learning in Christian Education*, (Philadelphia: The Westminster Press, 1962), p. 183.

⁴⁷Boehlke, p. 134.

⁴⁸Boehlke, p. 134.

⁴⁹Albert E. Greene, Jr., "Norms and Objectives for Christian Education," in *Shaping School Curriculum: A Biblical View*, p. 11.

⁵⁰Seerveld, p. 144.