11-1-1971

The Process of Developing a Programmed Course in Christian Doctrine for Catachumens

Philip Bohlken
Concordia Seminary, St. Louis, pbohlken64@comcast.net

THE PROCESS OF DEVELOPING A PROGRAMMED

COURSE IN CHRISTIAN DOCTRINE

FOR CATACHUMENS

A Research Paper Presented to the Faculty
of Concordia Seminary, St. Louis,
in partial fulfillment of the
requirements for elective
P-200

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by

Philip Bohlken

November 1971

Arthur C. Repp
<u>Advisor</u>

SHORT TITLE

PROGRAMMING A COURSE IN DOCTRINE

TABLE OF CONTENTS

CHAPTER I

THE NATURE OF THE INVESTIGATION

Purpose of the Research

This paper summarizes research into the area of pro-
grammed instruction, sometimes also referred to as pro-
grammed learning or as teaching by machine. This research
is primarily an investigation of the principles and tech-
niques of programmed instruction with the view of using
these principles and techniques to write a sample learn-
ing program. The research which went into this paper is
used in the paper to adapt the principles and techniques
discovered for use in programming a course in Christian
doctrine. The programmed course is intended for use by
catachumens in their early years of adolescence as they
approach the time when they will enter into Communicant
membership in the Lutheran church. This paper is a first
step in researching what place and use programmed instruc-
tion might have in the church.

Validation of the Research

Programmed instruction is a rather new and somewhat
misunderstood educational development. Many people know
nothing of programmed instruction. Some of those who do
know something of it fear that it is the first step to-

ward the <u>Brave New World</u> of Aldous Huxley. The author's
first encounter with programmed instruction was as an high
school student in an American government class taught ex-
perimentally by programmed instruction. Results of that
experiment were very encouraging. The author's interest
in learning programs was revived during his vicarage when
he was confronted with the problems of teaching Christian
doctrine to children with little reading ability and al-
most no educational motivation. This paper is the first
step in discovering ways for the advantages of programmed
instruction to be brought to those special situations such
as the author encountered during his vicarage, and also
to all areas of the teaching ministry of the church. The
author thinks church educators ought seriously consider
programmed instruction as a viable option and a valuable
tool wherever it can be used with good advantage in the
church.

Limitation of the Research

This paper is limited to the process of developing
a short instructional program. The process of develop-
ment includes choosing the material to be programmed, defin-
ing the abilities of the students who will use the program,
setting the goals of the program, writing the program with
consideration of the various principles and techniques of
programming, and testing, evaluating, revising, and retesting
the program. The writer thinks a discussion of man as he is

viewed by the behavioral psychologist and a discussion of the
advantages programmed instruction offers are helpful for the
reader's understanding of the process of adapting programmed
instruction for use in the church. This paper does not attempt
to decide whether programmed instruction is a more worthy method
than the more conventional methods of instruction. Neither
does this paper attempt to study all of the applications which
might be made of programmed instruction. Mention of specific
applications may be made, but they are made only because and
only where their mention aids in understanding how programmed
instruction is adapted for use in the church. Further, this
paper does not attempt to prescribe either the type of student
or the situation best suited for programmed instruction.
Again, any reference to these areas is with the idea that it
is helpful in understanding the process of adapting instruction
by program for use in the church. Also, this particular study
does not treat the use of programmed instruction in the church
in general, but only specifically in the area of confirmation
instruction. Much of what is said about the development pro-
cess as it relates to confirmation classes would, however,
also be applicable to other areas of Christian education.

Definition of Terms Used

Observing behavior is the term programmers use for the
activity of the student as he works through the program. It
refers to the way in which the student behaves as he reads
and responds to items in the program. A synonym for observ-

ing behavior is attention. Programmed instruction attempts to control the observing, or attention of the student so that a response is made which can be observed and measured.[1]

A <u>reinforcer</u> is a signal to the student that his response is acceptable. Such reinforcement is given to the student immediately after he makes an acceptable response. A reinforcer may be any signal which the student understands as confirmation of an acceptable response.[2] In the sample program included in the Appendix, as in most programs, the reinforcers are in the form of the printed correct answer.

A <u>lay lead in</u> is an item which requires a response which can easily be made by the student on the basis of knowledge and skills which he brings to the program. The lay lead in relies completely on the previous background of the student.[3]

An S^D, or <u>discriminative stimulus</u>, is any stimulus which stimulates the student to make an appropriate response. For example, a program may be devised which asks a student to make a response by pressing a certain button when he hears a certain type of sound. He is to ignore all other types of sound which he may hear. When he presses the button after he hears the type of sound he is to identify he is

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[1]Dale M. Brethower, <u>Programmed Instruction: A Manual of Programming Techniques</u> (Chicago: Educational Methods, Inc., 1963), p. 119.

[2]<u>Ibid.</u>, p. 44.

[3]<u>Ibid.</u>, p. 79.

reinforced by a light, or some other reinforcer. The sound which the student is to identify and respond to is the discriminative stimulus.[4]

__Prompts__ are signals in the program which aid the student in making the appropriate response. They are a type of discriminative stimulus. They are used to increase the probability that the student will make the appropriate response in the presence of a certain stimulus.[5]

A __formal prompt__ is a type of prompt which uses its particular form as a discriminative stimulus.[6] An underlined word in a sentence has a form which prompts the student to pay particular attention to that word and to consider it carefully in making his response.

A __thematic prompt__ is similar to a formal prompt, except that it makes use of a theme rather than using its form. If the student has been led to think about cheese it likely his response to a stimulus will deal with cheese rather than with bricks or some other object.[7]

__Fading__, or __vanishing__, is a technique employing the use of formal prompting. If the programmer wishes to teach the student a definition the programmer may fade the definition. The definition itself is the discriminative stimulus to which the

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[4]__Ibid.__, p. 27.

[5]__Ibid.__, p. 95.

[6]__Ibid.__, p. 67.

[7]__Ibid.__, p. 87.

student gives his response. As the program proceeds more and more words are blanked out, or faded, from the definition which the student is to learn. The student responds with the missing words until he has learned the whole definition.[8]

Linear programs are written so as to follow a straight line of thought. The programmer takes the student from the level of the student at the beginning of the program along a straight, programmed path to the end of the program by gradual steps.

Branched programs are written with built in detours. If a student has difficulty at one of the branch points he is instructed to go to a different point where he begins a branch of the program. The purpose of this type of program is to give the student any remedial work he might need at any one of several steps.

The immediate application frame is a specially constructed item giving the student a piece of information. Once the student has this information he is asked to make a response on the basis of the new information.[9]

Initial behavior is the sum total of the student's skill and knowledge before he begins the program.

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[8]Ibid., p. 83.

[9]William A. Deterline, "Practical Problems in Programmed Instruction," Programmed Instruction: The Sixty-sixth Yearbook of the National Society for the Study of Education, Part II, edited by Phil C. Lange (Chicago: University of Chicago Press, 1967), p. 191.

<u>Terminal behavior</u> is the sum total of the knowledge and skills of the student after he has completed the course which the programmer wrote for him. This assumes that the program was successful in teaching the student what it set out to teach him. Terminal behavior is the initial behavior of the student plus what he learned from the program. The goal of the program is to move the student to the desired terminal behavior established by the programmer.

A <u>panel</u> is a table of information which the student is to refer in order to respond to portions of the program. The programmer may choose either to use or not to use panels, depending on the program. A Bible verse could be used as a panel.

A <u>criterion frame</u> is an item at or near the end of the program with the purpose of testing the student's progress toward terminal behavior on the basis of what he has learned from the program.[10]

A <u>teaching machine</u> is a mechanical device which presents the program to the student with even more control over the observing behavior of the student than the program alone is able to offer. Specifically, the teaching machine prevents the student from looking ahead in the program, cheating by looking at the answers before responding, and also from not

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[10]"The Development of Quality Control Procedures for Programmed Learning," from a Programmed Learning Workshop, offered under the auspices of the Board for Higher Education, The Lutheran Church--Missouri Synod at Concordia Teachers College, River Forest, Illinois, August 20-22, 1962.

responding.[11]

Assumptions

The author has two assumptions which bear listing for the reader. First, the author assumes that Christian doctrine can be put into the form of a learning program. Secondly, the author assumes that for this first step investigation in the field of programmed instruction and the process of adapting it for use in the church there is no need to prove that programmed learning can be adapted to special ministry situations, but rather the author assumes that it is satisfactory at this step to develop and test a learning program using a group of "normal" catachumens.

Overview of the Thesis

The body of this thesis begins with a discussion of man as he is viewed in the eyes of the behavioral psychologist. The author will show that even though a behavioral psychologist such as B. F. Skinner holds a view of man contrary to the view of man held by members of the Christian church programmed instruction can still be used as an educational tool in the church. The next section of the thesis treats some of the advantages of programmed instruction so the reader will be in a better position to understand the process of adapting

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[11]Brethower, p. 133.

programmed instruction for use in the church. The author goes
on to discuss the considerations involved in deciding what it
is that will be programmed. Reference is made to the author's
reasoning in deciding on the material programmed in the sample
program found in the Appendix. Next the author discusses the
type of program which is to be used and the method of its
presentation to the students. It is also necessary to dis-
cuss the role which the teacher has in a program instructed
class. Again, comparison will be made to the sample program
in the Appendix since these considerations affect the shape
and type of the program which the programmer devises. After
this the author discusses who the students will be and the
specification of the initial behavior of the student. Next
the author discusses the goals of the program as the pro-
grammer establishes them. This discussion includes a short
discussion of the goals of Christian education with reference to
setting goals for a learning program in terms of behavior. It
is also necessary to discuss the behavioral psychologist's
understanding of learning as a change in behavior. This dis-
cussion involves the process of establishing the terminal
behavior toward which the program will move the student.
Again reference is made to the process at this point as the
author handled it in developing the sample program in the
Appendix. After giving consideration to these preliminary
matters the author discusses the techniques and principles
involved in the actual writing of a program. These princi-
ples and techniques are illustrated with frames from the

sample program in the Appendix. After the discussion on the principles and techniques of writing a program the author discusses the problems of evaluating, testing, and revising a learning program. Finally, the author gives the conclusions of his research.

Previous Investigations

In 1962 the Board of Higher Education of the Lutheran Church--Missouri Synod sponsored a workshop on programmed learning at Concordia Teachers College, River Forest, Illinois. The workshop was held to familiarize church educators with programmed instruction and possible uses it might have in the church. The workshop noted that Frederick D. Kramer had developed and tested a learning program to be used in teaching Bible verse memory work to Lutheran elementary school children. He found that the children using the program enjoyed their memory work more but also took longer to learn it than did a control group using more conventional methods to learn memory work. The workshop also noted the efforts of Mr. Erich Helge of Immanuel Lutheran School of Kansas City, Missouri. Mr. Helge had begun to program several units on the Lord's Prayer with the idea of publishing his work after it was sufficiently tested.[12]

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[12]Jack L. Middendorf, "Programming Religious Materials--A Survey,"from a Programmed Learning Workshop, offered under the auspices of the Board for Higher Education, The Lutheran Church--Missouri Synod at Concordia Teachers College, River Forest, Illinois, August 20-22, 1962, p. 1.

Methodology

The major source used by the author is Dale M. Brethower, Programmed Instruction: A Manual of Programming Techniques. Whereas this thesis deals with the process of developing a learning program for use by catachumens the author found Brethower very helpful as a guide to the construction of a learning program. That, in fact, is the main objective of Brethower's work. It is true that there are other manuals which treat programming technique, but the author found the work of Brethower to be the most helpful. The work of Brethower is in the form of a learning program. The author found working through a learning program which dealt with the topic of writing learning programs to be a most helpful way to study programming techniques and principles. Where other sources discussed programming technique Brethower could not escape actually illustrating it for the readers of his work. Where other sources were sometimes vague in their presentation Brethower gave the readers of his work the experience of the actual use of the techniques discussed. Another reason why the author chose Brethower as his major source is that the work of Brethower is based on over two years experience in actual programming research. His presentation in program form itself was field tested and revised on the basis of the experience of students using the program.

The author also consulted other authorities. They are

cited where they have something significant to offer which Brethower does not offer.

The author gathered information from various authorities on the construction and principle of learning programs and then set about using it to develop and test a program of his own. It is that program which is included in the Appendix.

CHAPTER II

THE DEVELOPMENT OF A LEARNING PROGRAM

The Behavioral View of Man

Programmed learning is a development from the field of behavioral psychology. The behavioral psychologist is interested in predicting and controlling human behavior. When one speaks of predicting and controlling human behavior many persons raise objections on the basis of ethical considerations.[13] Christians considering the use of programmed instruction in Christian education are naturally interested in the ethical aspects of the way in which programmed instruction views human behavior, especially if their might be a basic conflict in the view of man between Christians and behavioralists. At this point the author wishes to discuss the way in which the behavioral psychologist views man and how his view of man affects programmed instruction, particularly as it is to be used in the church. Because B. F. Skinner is largely responsible for the development of programmed instruction his view of man is discussed here.

Skinner believes that human behavior is controlled from outside man rather than from within. He believes that an inner man who controls the actions of a person is a myth which

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[13]Edward J. Green, The Learning Process and Programmed Instruction (New York: Holt, Rinehart and Winston, Inc. 1963), p. 1.

people have perpetuated in order to explain actions they did not understand.[14] Sin is not an entity which is part of the nature of a person, but instead a person sins because sin has become a reinforced part of the behavior of a person.[15] Skinner believes that human behavior can be predicted and controlled as if it was a chemical reaction. In his new book, _Beyond Freedom and Dignity_, Skinner outlines his plan for conditioning people to respond to group interests. He envisions programming an entire society tailor made to meet the wishes and expectations of the programmer.[16] Skinner is a follower of the behavioralism of Watson, who rejected any concept of mind and emotion and described human behavior as reflex response to environmental stimuli. In the view of Watson environment alone controls what a man is and becomes. Watson was certain he could take a baby and condition it to enter any profession he decided regardless of its intellect or any other factors. [17]

The behavioral view of man held by Skinner and Watson is not harmonious with the Christian view of Christian man as _simul justus et peccator_. Their view of man also ignores the fact that not everyone is the same, but God has given

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[14]"Skinner's Utopia: Panacea, or Path to Hell ?", _Time_ (September 20, 1971), 47-48.

[15]B. F. Skinner, "Beyond Freedom and Dignity," _Psychology Today_ (August 1971), 78.

[16]_Time_, 47.

[17]_Ibid._, 49-50.

different gifts to each of his people.[18] The question which

needs to be asked is how a purely behavioral view of man

affects the use of programmed instruction by Christians ?

Dr. David Allen Hubbard of Fuller Theological Seminary be-

lieves that the behavioral sciences can be employed in ed-

ucation by Christians without compromising the Christian

view of man unless one uses the behavioral sciences in de-

veloping a whole philosophy of life as B. F. Skinner has

done. If one develops a complete philosophy of life based

on the behavioral sciences a conflict with the Christian view

of man does certainly occur.[19] Speaking to this same question,

Harold Haas said, "Finally, we may note that PL (sic) is intrin-

sically neither good nor bad, moral nor immoral, any more than

educational movies, slides, and tape recorders are moral or

immoral."[20] He further stated, "Our responsibility as commit-

ted Christians is to see that they are used to the glory of

God and the welfare of our fellow men."[21]

Regardless of any possible conflict over the view of man

and the avoidance of a conflict through limiting one's use of

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[18]I Corinthians 12

[19]Dr. David Allen Hubbard as interviewed by Douglas Edwards
on "The World of Religion" broadcast November 7, 1971 by the
Columbia Broadcasting System.

[20]Harold Haas, "Programmed Learning Workshop - Comments,"
from a Programmed Learning Workshop, offered under the aus-
pices of the Board for Higher Education, The Lutheran Church--
Missouri Synod at Concordia Teachers College, River Forest,
Illinois, August 20-22, 1962.

[21]Ibid.

the behavioral sciences away from a total philosophy of life,
some might wonder about the possibility of a programmer being
able to brainwash students. To this point Green wrote, "Pro-
grammed instruction is no more likely to 'brainwash' students
than is the biased lecture of a gifted platform artist."[22]
As an educator Green in convinced that the learning process
is not controlled differently in any essential way by programmed
instruction than it is under the usual schoolroom conditions.[23]

The author agrees with Haas that programmed instruction
is only a method which Christians can and should put to good
use. The author also agrees with Hubbard that so long as
programmed instruction and the behavioral sciences do not
become the basis of a total philosophy of life there need be
no conflict between the way a behavioralist like Skinner views
man and programmed instruction as it is used by Christians in
Christian education. Further, the author agrees with Green
that a person is no more likely to be brainwashed by programmed
instruction than by any other procedure.

Advantages of Programmed Instruction

A brief mention of some of the advantages of using pro-
grammed instruction is herewith given. The author does this
because an understanding of the advantages of programmed in-
struction will help the reader to better understand how pro-

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[22]Green, p. 205.

[23]Ibid., p. 112.

grammed instruction might be adapted for use with catachumens
in order to make use of these advantages. Much of this dis-
cussion would also apply to adapting programmed instruction
for use in the church in general.

Learning programs are guaranteed to be understandable by
the student. A new program is tested, revised, and tested
again and again with students until students are able to work
through the program with very few errors. Learning programs
have been shown to be as efficient when the sole method of
instruction as the entire conventional procedure of lecture,
homework, and individual or class help. In addition, pro-
grammed courses require less time of the student to learn the
same material than does the more conventional approach. A
good learning program requires the student to pay attention
to each frame, or item, if he is to complete the program. He
can not skip around as he might with a textbook. Evidence
shows that even if a student cheats during a program by peek-
ing at the answers he still learns. Administration of tests
by the teacher can be cut to a minimum when a programmed course
is used because the program is continually testing the student's
grasp of material by asking him to make responses on the basis
of what he has learned. Most students find programmed in-
struction automatically encouraging because they immediately
learn that their response was correct. If a student makes an
incorrect response it is automatically discouraged so that the
next time he will more probably make the correct response and
be automatically encouraged. The constant encouragement

offered by programmed instruction has been known to produce good effects on the attention span, reading skills, and work output of the students. If the student has difficulty in learning the material presented in the program his responses will show the exact area of difficulty and the teacher can give the student extra help.[24] Many teachers find that through using programmed instruction in at least a portion of their classes they gain valuable insight into the way their students learn and the special difficulties their students have so that the teachers become better teachers.[25] With programmed instruction the slower student can go at his own pace. He need not feel he is holding back the class, nor does he have to be ashamed of his answers. He can work knowing that when he has completed the program his grasp of the material and his grades will be about the same as those who were able to proceed at a faster rate.[26] Programs can also be written so as to be used with as many as three different grade levels using the same program. Differences in intelligence and of background effect only the time the student uses to do the program and may slightly effect the number of student errors unless the differences are extreme.[27]

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[24]Michael Schriven, "The Case for and Use of Programmed Texts," Programmed Instruction: Bold New Venture, edited by Allen D. Calvin (Bloomington, Indiana: Indiana University Press, 1969), pp. 5-7.

[25]Ibid., p. 19.

[26]Ibid., p. 20.

[27]Ibid., p. 6.

If the competance of the teacher is a problem a good pro-
grammed course serves to place a floor below the performance
of the teacher and insure certain minimum standards of ex-
cellance.[28]

Selecting Material to be Programmed

The programmer must decide what it is that he wishes to
teach by way of a program. The author has already stated that
his purpose is to write a program for teaching Christian doc-
trine to catachumens. The author chose to program material
dealing with the nature of the Sacrament of the Altar. The
nature of the Sacrament of the Altar is a unit which can be
isolated and taught without a great deal of background material
having to first be taught. Other sections of Christian doc-
trine could just as well have been used for the sample pro-
gram which the author wrote. The author chose to use the pre-
sentation of the Concordia Catechism Series as his source and
guide in writing the sample program.[29]

After the programmer has chosen the material which he will
program and defined the limits of his treatment he must organize
it in an order and progression suitable for programming. Even
though the material chosen may already be in logical order, it

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[28]Ibid., p. 22.

[29]Richard J. Schultz, "What is the Sacrament of the Altar?",
This is the Christian Faith, Concordia Catechism Series, edited
by Walter M. Wangerin (St. Louis: Concordia Publishing House,
1967), pp. 208-211.

is not necessarily in an order which lends itself to programming.
Material in a program must not only be in a logical order,
but it must also be arranged in such a way that the transition
from one point to another is as natural and as smooth as can
be. Schultz's material in the Concordia Catechism Series is
in logical order for a reader, but the author found it neces-
sary to change the order of the points which Schultz makes
for purposes of putting his material in the form of a learning
program. Testing the program with students for whom it was
designed helps the programmer to find the proper sequence for
the material should he find that he has planned poorly.[30]

The Use of the Program and the Role of the Teacher

Before he can write a program the programmer must know
what use he will make of the program.[31] Programmed instruction
may be used either as a supplement to the learning experience,
or it may be used as the sole learning experience of the stu-
dent. If a textbook is used in the learning experience pro-
grammed instruction could be used to introduce the student to
basic material and main concepts so that he is a more careful
reader of the textbook.[32] If the programmer chose to use the

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[30]Schriven, p. 20.

[31]Green, p. 148.

[32]Ted and Margaret Ward, Programmed Instruction for
Theological Education by Extension (East Lansing, Michigan:
Committee to Assist Missionary Education Overseas, 1970),
p. 7.

program in this way he would not write a program which was
long and very comprehensive in its treatment of the material.
But in accord with his purpose and planned use of the program
the programmer would make a shorter and more basic presentation
in his program. This is a very good approach. A program might
also be used to teach a concept difficult to teach by some
other means.[33]

Generally programmed instruction should not be used as
just another form of homework for the student. It is much
more than that. It is an alternate way of teaching. The
teacher should not exactly duplicate the material taught in
the program in the regular classroom presentation.[34] Because
programmed instruction is an alternate method of teaching the
programmer may easily choose to let it stand as the sole
method of instruction, depending on needs and circumstances.
In that case the programmer would write a rather detailed and
comprehensive program.

The sample program which the author wrote is designed to
be used as an introduction to basic material. The sample pro-
gram is designed to give the student a very good background,
but also to leave room for expansion further illustration by
the teacher.

Programmed learning does not replace the teacher by any
means. When programmed instruction first appeared the em-

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[33]Ibid., p. 3.

[34]Ibid., p. 6.

phasis on teaching machines led many to think that the place
of the teacher was about to vanish. The contributions of
the teacher are eliminated by programmed learning only if
the teacher never had anything to contribute anyway.[35] If
anything programmed instruction provides a unique opportunity
to utilize the distinctive talents of the individual teacher
as never before.[36] Young students very much need a person to
serve as a model for their development. Programmed learning
gives the teacher a place wherever human skills are required.[37]
Because the program has done much of the teacher's normal
preparation and teaching the teacher is freed to spend time
developing special learning activities which augment and
expand what the student learned in the program.[38] The teacher
is also very needed to help those students who are slower or
have difficulty with some of the material they are being
taught.[39]

Linear and Branched Programs

The programmer must decide if he wants to use a linear

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[35]Schriven, p. 27.

[36]Martin L. Maehr, "Programmed Learning and the Role of
the Teacher," from a Programmed Learning Workshop, offered
under the auspices of the Board for Higher Education, The
Lutheran Church--Missouri Synod at Concordia Teachers College,
River Forest, Illinois, August 20-22, 1962.

[37]Ibid., p. 5.

[38]Schriven, p. 19.

[39]Supra, p. 18.

or a branched program. A linear program is easier to write and faster to produce. A branched program provides remedial material for students who need extra exposure to the material or a slower presentation. In some programs the errors of the poorer students may have caused the programmer to revise the program in favor of their level of performance. This would tend to bore and hold back the faster students, and might be a good reason to use a branched program.[40]

Schriven prefers a good linear program to a branched program and says that most students do also. He finds that students do not enjoy being told that they made a mistake and must do extra work to compensate for it. Part of his preference for linear programs is in opposition to the extra effort involved in producing a good branched program.[41]

The author also prefers linear programs to branched, agreeing with Schriven. If a class using programmed instruction was made up of students covering an extremely wide spectrum of intelligence a branched program might be necessary to keep from boring the bright students and still give the slower students the remedial work they needed. If a class was made up of students where the brightest and the dullest were not poles apart in mental capabilities a good linear program would work

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[40]"The Development of Quality Control Procedures for Programmed Learning," from a Programmed Learning Workshop, offered under the auspices of the Board for Higher Education, The Lutheran Church--Missouri Synod at Concordia Teachers College, River Forest, Illinois, August 20-22, 1962.

[41]Schriven, pp. 15-18.

very well. The author assumes that the members of the "normal" confirmation class for whom his sample program was designed are not poles apart in mental ability and that any slow students can be instructed with the aid of some individual attention, if necessary. For these reasons, the author's sample program is a linear program.

Programmed Texts and Teaching Machines

Not all learning programs are administered by means of a teaching machine. Many are printed in the form of a printed text. Printed texts are much more portable than are teaching machines, and often more portable than the programs teaching machines use. Texts are also able to be used under many divergent conditions. Many machines require that they be near a source of electric power.[42]

The ideal teaching machine is completely protected against student cheating. The machine presents the material in a sequence of one item following another. It requires a response from the student before it will advance to the next frame. It gives the student immediate feedback and reinforcement.[43]

Studies show no difference in results and performance between groups using machines and groups using programmed texts, but machines are more expensive than are programmed texts.[44]

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[42]Ibid., p. 14.

[43]Green, p. 128.

[44]Schriven, p. 13.

Teaching machines cost from twenty-five dollars for a simple molded plastic machine to over 6,000 dollars for an elaborate machine which administers driver education programs costing eighty dollars each.[45]

From the viewpoint of economics programmed texts are probably more practical than machines, particularly for use by churches. If the programmer can trust his students not to cheat and so sabotage the purpose of the program a programmed text is adequate. The author has assumed the students for whom his sample program was designed can be trusted to that extent, and so the author's sample program is in the form of a programmed text.

The Students

The programmer must know who the students are and what they can do or his program may fail before it is written. Describing what the students know and what they can do with that knowledge is referred to as the specification of the students' initial behavior. It is important that the programmer accurately specifies the initial behavior of the students or they may not be able to respond correctly to the first items of the program.[46]

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[45]Carl H. Hendershot, _Programmed Learning: A Bibliography of Programs and Presentation Devices_ (Bay City, Michigan: Carl H. Hendershot, 1967), pp. C-4, C-6.

[46]Dale M. Brethower, _Programmed Instruction: A Manual of Programming Techniques_ (Chicago: Educational Methods, Inc., 1963), p. 129.

The author has developed his sample program for an average Lutheran catachumen. The author envisions an average Lutheran catachumen as between the ages of twelve and fourteen. He is of average intelligence and is able to read on a level corresponding to his age and schooling. The author has chosen to write the sample program for a student who has attended Sunday School fairly regularly, but does not have a Christian Day School education. He attends church regularly with his parents. He has seen people attending the Sacrament of the Altar, but has had no instruction about the nature of the Sacrament yet.

The Goals of the Program

Just as the programmer must establish what the student can do before the program, he must also establish what the student is to do at the end of the program. Programmers refer to this as the specification of the desired terminal behavior.[47]

At this point it might be well to more fully describe what is meant by terminal behavior. Programmers refer to learning as a change in the behavior of the student.[48] The program does not seek to produce understanding or even ability to do something, but the programmer wants the program to alter the student's behavior so that he does some-

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[47]Ibid., p. 37.

[48]Green, p. 40.

thing he did not do before, or at least does something differently from what he did before the program. If the programmer sees that the behavior of the student is changed in some way he knows that the student also understands and has the ability to do what he was taught in the program.[49]

When the programmer specifies terminal behavior he must translate the concepts of knowledge which he wishes to teach in the program into behavioral terms. Green lists several questions the programmer may ask himself in order to help the programmer to translate concepts into terms of behavior. The programmer may want to ask what the student should be able to do when he completes the program, what verbal skills the student should have, what questions the student should be able to answer, and what discriminations the student should be able to make.[50] Ward also lists several similar questions which may be of help to the programmer. He suggests the programmer ask what the student must do to demonstrate his learning, under what conditions the desired learning is considered adequately demonstrated, and what level of performance is considered adequate by the programmer.[51]

There is a problem encountered in Christian education which is not encountered in secular education. Secular edu-

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[49]Brethower, p. 25.

[50]Green, p. 149.

[51]Ward, p. 17.

cators avoid setting educational goals where there is no way to measure those goals. Christian educators seek to bring an increase in such things as faith and devotion, which are not able to be quantified according to human systems. The principle of setting only those goals for education which can also be measured does not apply in Christian education.[52] Christian educators set goals remembering that they are the instruments through whom God works to bring increase. Any increase comes only through the Holy Spirit and can be measured by Him only.[53]

The author set the same goals for his sample program which Repp discusses as qualifications for the communicant. The communicant is to see the bread and wine in the Lord's Supper as being different from ordinary bread and wine, and to recognize the real presence of the Lord's body and blood in the Sacrament.[54] In addition, the sample program which the author wrote teaches the student to recite a definition of the Lord's Supper and to be conversant with the various names which Christians use for the Sacrament of the Altar. These goals are stated in good behavioral terminology as they should be for a learning program.

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[52]Arthur C. Repp, _Confirmation in the Lutheran Church_ (St. Louis: Concordia Publishing House, 1964), p. 197.

[53]Ibid.

[54]Ibid., p. 169.

Principles and Techniques of Programming

When the programmer has made decisions on all of the above
considerations he is finally ready to begin writing his pro-
gram. Naturally the programmer wants his program to be a good
one. Unfortunately, no one can prescribe a set of principles
and techniques which guarantee a successful learning program.
There are basic principles and useful techniques which should
be followed in writing an instructional program, but they are
only guides. Writing a good learning program is much like
writing a good book. In either case no one can tell another
person exactly how it is done. The student is the final judge
of the quality of a learning program.[55]

In principle the programmer simply "arranges conditions
so the desired responses will be emitted and reinforced" by
the student.[56] A good learning program immediately reinforces
student responses, requires emission of responses, progresses
gradually through the material, fades prompting as the program
progresses, controls the student's observing behavior, edu-
cates in a variety of ways through controlled use of examples,
and is modified to fit the student.[57]

The observing behavior of the student is controlled through
the use of a blank to be filled by the student. In order to

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[55]Green, p. 139.

[56]Brethower, p. 21.

[57]Ibid., p. 237.

complete the blank the student is required to pay attention
to what he reads.[58] Multiple choice responses might also be
used to control the attention of the student.[59] Completing
a blank item is not difficult, but the program must be de-
signed in such a way that the student is required to learn
and use the material presented by the program in order to
give his response. If the student was not controlled in this
way he could easily complete all responses without using the
material presented by the program. Under such conditions
the student would learn nothing.[60] These are the general
principles which underlie the writing of a learning program.
From this point forward the author wishes to illustrate
specific techniques by means of frames from the sample pro-
gram in the Appendix. Although the author has made a sin-
cere attempt to select frames which are illustrative of the
technique under discussion, in many cases one frame pulled
from its context in the whole program loses its illustrative
value. The author suggests that the reader might be best
served by reading the sample program at this point, or by
regularly turning to the reference in the sample program and
reading one or two items immediately proceeding and following
the frame chosen for illustration.

When the programmer constructs a frame he does not

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[58]Ibid., p. 117.

[59]Ibid., p. 181.

[60]Ibid., p. 219.

simply write a sentence and then arbitrarily erase a word or
two. Instead he gives careful consideration to what it is
that the frame in question is to teach.[61]

> 9. At the Passover meal the disciples ate (bread)
> and drank (wine) which Jesus gave them.[62]

Frame number nine is designed to teach the student that it was
bread and wine which Jesus gave the disciples. The observing
behavior of the student would have been just as well controlled
had "Jesus" been called for as a response instead of "bread"
and "wine". The responses for this item were very carefully
chosen to lead into the Words of the Institution, which follow
in the next items. The student is to learn that the elements
men eat and drink at the Sacrament are bread and wine. This
item aids other frames teaching the place of the bread and
wine.

All the items in a program are to give new information,
or to give new examples and contexts for expansion of the
student's understanding of the concept.[63]

> 2. While the people were in the desert their
> bodies grew weak. God gave them food so they
> could be (strong) again.[64]

> 3. We also need strength from God because many
> times in our life our spirits and our faith be-
> come (weak).[65]

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[61]Ibid., p. 177.

[62]Infra, p. 45.

[63]Brethower, p. 193.

[64]Infra, p. 46.

[65]Ibid., p. 47.

Frame number two introduces the concept that God provides strength for his people and their bodies. Frame number three expands the student's understanding of the concept to include the spiritual strength which God's people also need.

Frames two and three are also illustrative of other programming techniques. New information and new concepts may be introduced in the program after a basic concept has been only partially introduced. The new concepts are related to the old in such a way that they serve to expand the student's understanding of the old while introducing new information. This technique enables the programmer to introduce extensions of the original concept and also help the student to review what he has learned about the original concept.[66] The author did not make full use of this technique in frames two and three, but could have if it had been in the best interest of the program. If the author had been developing a program dealing with the providential care of God, he could have used frames two and three to expand the student's understanding of God as the "provider of material blessings" to further include the concept of "God as provider of spiritual blessings also". Introducing the second concept at this point would have also helped the student to review what he knew about the first, as well as expanding the first concept to include

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[66]Brethower, p. 193.

its relation to the second. The whole process of relating
new concepts to concepts already partially established does
require more than two frames. This discussion has described
how the process could have been initiated by frames two and
three.

Frames two and three also illustrate the small step of
progression which is made from one frame to another. Care
must be taken that the programmer does not proceed too
rapidly. If he does proceed too rapidly he may lose control
over the student and the purpose of the program will also be
lost. Again, there are no rules which tell the programmer
exactly how fast is too fast. Skinner has found that the
optimal size of each progressive step from one frame to
another is something which must be determined through ex-
perimentation.[67] The maximum amount of progression in ex-
panding old material and introducing new is largely determined
by the capabilities of the student using the program.

Brethower finds that calling for the student to make a
response in several grammatical forms is a useful technique.[68]
This technique has been employed in frames fifteen and seven-
teen.[69] Both frames discuss the real presence of Christ's body
and blood in the Sacrament. Frame fifteen calls for the response
"Real Presence". Frame seventeen calls for "really present" as

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[67]Green, pp. 114, 115.

[68]Brethower, p. 71.

[69]Infra, pp. 51, 45.

a response. However, Brethower cautions against asking the student to make the same response in several successive frames.[70]

Frame number one of the sample program employs the lay lead in.

> 1. After they left Egypt, the children of Israel were in the desert for forty years before arriving at the land promised to them by (God).[71]

The knowledge which allows the student to make an acceptable response to frame number one is part of his initial behavior. The students for whom the author designed this program are familiar with the exodus from Egypt and can easily make the correct response.

A formal prompt may be in the form of an underlined word.[72] In frame number fifteen "really present" is underlined, formally prompting the response of "Real Presence".

> 15. If we believe Christ's body and blood are really present with the bread and wine we believe in the R(e a l) Presence.[73]

Additional formal prompting is given this item through the use of a blank for each letter in the response as well as the first letter of the response given to the student. One frame is seldom as saturated with prompts as item fifteen. Still, frame fifteen was a cause of student error during the testing of the sample program.

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[70]Brethower, p. 207.

[71]Infra, p. 45.

[72]Brethower, p. 93.

[73]Infra, p. 51.

Frame number twelve makes use of thematic prompting.

12. When we go to the Sacrament of the Altar we,
too, receive Christ's own (body) and (blood).[74]

Frame eleven teaches the student that Christ's disciples re-
ceived His body and blood. The theme of receiving Christ's
body and blood serves as a prompt for the correct student re-
sponse to frame twelve.

Frame number thirty-three asks the student to refer to a
panel and to make his response on the basis of information
found in the panel. The panel to which the student is to
respond is a verse from the Bible.

33. Find I Corinthians 11:24 and 11:25 in your Bibles
How does Jesus say we are to celebrate the Sacrament
of the Altar ? Write the last six words of verse 24.
"(Do this in remembrance of me)."[75]

Panels are either included with the frame to which they apply,
or they are put at some other place in the program for easy
reference by the student. Green cites research indicating
that students tend to not use panels.[76] For that reason the
author wrote frame thirty-three in such a way as to force the
student to use the Bible as a panel.

Research indicates that students tend to ignore anything
following the blank in a frame.[77] The reader will notice that
nearly all frames in the sample program are written with the

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[74]Ibid., p. 48.

[75]Ibid., p. 46.

[76]Green, p. 154.

[77]Ibid.

blank occurring at or very near the end of the frame. When
it was not possible for the blank to occur at the very end
the author made every effort to give all important information
before the blank.

Frame number forty-six is a criterion frame. It tests
the student's learning of what has been taught earlier.[78] It
asks the student to give four names for the celebration in
which Jesus gives us His body and blood with the bread and
wine.[79] This discussion of the criterion frame is adequate
and there is no gain in reprinting frame forty-six here.

Of late programmers have come to look more favorably than
previously on the use of frames constructed around a question
rather than a blank. Generally, the programmer gives the stu-
dent a piece of new information and then asks him to respond
on the basis of the new information. This technique is re-
ferred to as an immediate application frame.[80] Frame number
six is a type of immediate application frame.

> 6. The name of the extra source of strength which
> Jesus gave His disciples and us is the Sacrament of
> the Altar. Write the name of the extra source of
> strength which Jesus has given us.[81]

This frame is not an extremely challenging one, but it does give
the student a piece of new information and ask for a response

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[78]"The Development of Quality Control Procedures for
Programmed Learning" from Programmed Learning Workshop.

[79]Infra, p. 51.

[80]Deterline, pp. 190, 191.

[81]Infra, p. 50.

on the basis of that information. A more challenging variation
of this technique might ask the student to make a decision or
a discrimination on the basis of the new information.[82]

The author has included a series of frames in the sample
program designed to teach the student a definition from memory.
According to Brethower, any definitions taught the student are
to be introduced only after the student has been taught the
use of the concepts which are used in the definition.[83] The
author has followed this approach. The definition taught,
which defines the nature of the Sacrament of the Altar, comes
after the student has learned about the nature of the Sacrament.
Frame twenty introduces a portion of the definition.

> 20. What is the Sacrament of the Altar ? It is
> the true body and blood of our Lord Jesus Christ
> under the bread and wine.[84]

Frame twenty does not call for a response, but directs the
student to proceed to the next frame. Frame twenty is only an
information frame. Such frames are not used frequently. Frame
twenty-two adds another portion of the definition after the
student has learned the concept behind it, and fades two words
for the student to supply as a response.

> 22. What is the Sacrament of the Altar ? It is
> the true body and blood of our Lord Jesus Christ
> under the (bread) and (wine), instituted by Christ
> Himself.[85]

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[82]Deterline, p. 190.

[83]Brethower, p. 63.

[84]Infra, p. 48.

[85]Ibid., p. 50.

With frame twenty-five the definition is complete and more

words have been faded from familiar portions of it.

> 25. What is the Sacrament of the Altar ? It is
> the true (body) and (blood) of our Lord Jesus
> Christ, under the (bread) and (wine), for us
> Christians to eat and to drink, instituted by
> Christ Himself.[86].

More words are faded from the definition with each succeeding

frame until only blanks remain.

> 30. What is the Sacrament of the Altar ? __ __
> __ ___ ___ ___ ____ __ __ ___ ____ ____,
> ___ __ ____ ___ ___, ___ __ _____[87] __
> __ __ ___, _____ __ ____ ____.

The relative size of the blanks together with the punctuation

serves to formally prompt the student. The programmer wants

the student to be able to give the definition without any

prompting. Frame thirty-one asks the student to respond with-

out the benefit of prompting.

> 31. What is the Sacrament of the Altar ? _____
> _____
> _____.[88] __
> _____.

The author learned this technique through working through

the work of Brethower, who teaches his students several

definitions in this same way.[89]

The author has illustrated the use of the techniques of

programming with selected frames from the sample program.

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[86]Ibid., p. 45.

[87]Ibid., p. 50.

[88]Ibid., p. 51.

[89]Brethower, passim.

The frames selected for illustrative purposes are not the only frames employing these various techniques. Neither do all of the frames employ all of the techniques discussed. Techniques are tools which the programmer uses according to his purpose and his skill in programming.

Testing and Revision of the Program

No learning program is good simply because someone has put material to be learned into program form. A bad program is no better than anything else poorly done. But, a good program properly developed and administered produces real results.[90] The only way to be sure a learning program is good is to test and revise it until it is good.[91] The student shows the programmer how successful his program is by the way the student learns the material presented in the program.[92]

In general, programmers use student error rate as the basis of program revision. If student errors are widespread throughout the program the programmer knows that the entire program is too difficult for the students using the program. Such a program needs thorough revision. It is important that students make few errors. When student errors are few they are likely to occur in only a few places throughout the program.

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[90]Schriven, p. 5.

[91]Green, p. 203.

[92]Ibid., p. 140.

Those items which are frequently missed by students can be

revised by the programmer.[93] Keeping student errors low

through revision of the program helps to keep student moti-

vation high.[94] The programmer is also interested in revising

frequently missed items because programmers find that items

frequently missed are poorly learned and quickly forgotten.[95]

On the basis of experience most programmers agree that

an error rate of about ten per cent is a desirable error rate.[96]

A program with an error rate of about ten per cent is not so

easy that the student can work through it without learning, and

not so hard that control of the student's observing behavior is

lost. Error rate is one of the best indicators of need for re-

vision which programmers have. When the author tested his

sample program he finally arrived at an error rate of eleven

per cent, indicating that most of the need for revision had

been met. However, Holland points out that error rate is not

a foolproof indicator that the program is successful. The

programmer may arrive at a low error rate by making most of

the items too easy. When items are too easy the student learns

nothing.[97]

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[93]Brethower, p. 215.

[94]Ibid., p. 209.

[95]Ibid., p. 219.

[96]Ibid., p. 109.

[97]"The Development of Quality Control Procedures for
Programmed Learning" from Programmed Learning Workshop.

Some of the revision of the program can be done by the programmer himself before he tests it with students. The programmer should make a list of the responses called for by the program and the frequency of each response.[98] Doing this enables the programmer to see if he has selected responses which are likely to be repeated in the presence of the desired discriminative stimuli, if the selected responses cause the student to pay close attention to the material in each of the frames, and if the student is being required to use what he learned earlier in the program.[99] The programmer should pretend he is a student and should read each item carefully.[100] Any items which are unclear or out of sequence should be revised. The programmer should also attempt to guess what incorrect responses the students will make and revise the program so they can be avoided.[101]

The real test of a program comes when it is used with the students for whom it was designed.[102] The programmer may decide to test his program with a large group of students simultaneously. Gilbert suggests that rather the programmer ought give his program to individual students, making revisions

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[98]Brethower, p. 185.

[99]Ibid., p. 187.

[100]Ibid., p. 217.

[101]Ibid., p. 219.

[102]Ibid., p. 167.

after each student uses the program. He says that this procedure gives the programmer skill at adjusting the program for individual student differences. Gilbert finds that before the programmer has tested his program with even ten students he will have modified the program to fit the needs of at least ninety-eight per cent of the students who will ever use the program.[103] The author tested his sample program in this way and can attest to the insight this method gives into individual differences and how to modify the program to fit them. One of the author's main reasons for adopting Gilbert's method was the factor of time. The author found it easier and less time consuming to arrange for testing with single students rather than with a large group of students.

The actual revision of a program may involve changing the wording of some frames to remove any ambiguity or lack of clarity. Most often revision of a program means that extra frames must be added to the program so that the progression of the program is more gradual.[104] The author found that both of these were necessary in revising the sample program.

Conclusions

Programmed learning may be used by Christian educators without any difficulties and conflicts arising over the view of man held by many behavioral psychologists. Programmed

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[103]Green, p. 116.

[104]Brethower, p. 111.

instruction is an educational method no more harmful or likely to brainwash students than is any other. Instead, programmed instruction has many features and benefits which could be put to good use in educating catachumens in Christian doctrine. Programmed instruction may be used with or without a teacher also giving instruction. The programmer must decide how the program will be used and administered before writing the program so that he knows what shape and direction the program should take. The author prefers programmed texts over programs written for teaching machines because he deems texts more practical and versatile, not to mention less expensive. When the programmer is ready to begin programming he must have a clear idea of both the abilities and knowledge of the students and the goals of the program. When the programmer writes a program in Christian doctrine, or any other subject, he makes use of programming techniques established through research and testing. Employing these techniques to their fullest potential requires skill which the programmer gains through experience. Student performance is the final test of any program and leads to revision of the program to fit student needs.

Writing a good program and testing it requires a great deal of time. It would not be worthwhile for each person desiring to use programmed instruction to write his own programs in Christian doctrine. If someone developed a good series of programmed materials in Christian doctrine and made them available to all who would want to use them the work would be worth the results.

APPENDIX

What is the Sacrament of the Altar?

Quite commonly learning programs in the form of a printed
text are arranged with one frame following another down the
page. When the student reaches the bottom he turns the page
and begins again at the top of the second page. The rein-
forcers appear in a column to the left or to the right of the
frames. This format depends heavily on the student to keep
a cover sheet over the reinforcer for a particular frame until
the student gives a response to the frame.

The format which the author has chosen to use in the
sample program is adapted from the format which Brethower uses
in his book cited above. With this format no cover sheet is
needed. The reinforcers can not be seen by the student until
he turns the page. The student is to make a response, turn
the page for the reinforcer, read the next frame and make a
response again. When the student reaches the last page of the
program he is to return to the first page of the program and
work through the second row of frames to the back page. The
student continues working through the program row by row until
he reaches the end of the program at the end of the bottom row
on the last page of the program.

1.   After they left Egypt, the children of Israel were in the desert for forty years before arriving at the land that was promised to them by ____.

(8)
disciples

9.   At the Passover meal the disciples ate _____ and drank _____ which Jesus gave them.

(16)
No

17.   Real Presence means that we <u>really</u> receive the body and blood of Jesus. It means they are actually, or _____ present.

(24)
weak

25.   What is the Sacrament of the Altar ? It is the true ____ and _____ of our Lord Jesus Christ, under the _____ and _____, <u>for us Christians to eat and to drink</u>, instituted by Christ Himself.

Go on to frame 32.

32.   Now you know what the Bible teaches about the question, "What is the Sacrament of the Altar ?" The Bible also tells us how we are to celebrate the Sacrament. Go on to the next frame.

(39)
proclaim the Lord's death

40.   "In remembrance of me" means we remember the One giving us His _____ and _____ under the _____ and _____.

(1)
God

2. While the people were in the desert their bodies grew weak. God gave them food so they could be _____ again.

(9)
bread
wine

10. When He gave the bread and the wine to the disciples Jesus said, "Take, eat, this is my body," and, "Take, drink, this __ my blood."

(17)
really

18. Find I Corinthians 10:16 in your Bible. St. Paul mentions four things which are present in the Sacrament of the Altar. What are they ?

_____, _____

_____, _____

(25)
body
blood
bread
wine

26. What is the Sacrament of the Altar ? It is the true ____ and _____ of our Lord Jesus Christ under the _____ and _____, for us Christians to eat and to drink, instituted by _____ Himself.

Go on to frame 33.

33. Find I Corinthians 11:24 and 11:25 in your Bibles. How does Jesus say we are to celebrate the Sacrament of the Altar ? Write the last six words of verse 24. " ____ ____ ____ ____ ____ __." (Use the Revised Standard Version of the Bible.)

(40)
body
blood
bread
wine

41. The Sacrament of the Altar has several other names. One is the Supper of the Lord, or the Lord's _____.

(2)
strong

3. We also need strength from God because many times in life our spirits and our faith become ____ .

(10)
is

11. Along with the bread and wine which they ate and drank, the disciples also received Christ's own <u>body</u> and _____ in a very wonderful and mysterious way.

(18)
cup of blessing
or wine, bread,
body of Christ,
blood of Christ

19. Some people believe the bread and wine are changed into Christ's body and blood. They believe only Christ's body and blood are present. We believe that Christ's body and blood are present <u>in</u>, <u>with</u>, and <u>under</u> the _____ and the ____ .

(26)
body, blood,
bread, wine,
Christ

27. What is the Sacrament of the Altar ? ___ is ___ true ___ ___ ___ of our Lord ___ Christ under the ___ ___ , ___ for us Christians to ___ and to _____ , instituted __ _____ Himself.

(33)
"Do this in
remembrance of
me."

34. Jesus said, "Do this __ _____ __ __."

(41)
Supper

42. The Greek word <u>Eucharist</u>, meaning "giving of thanks", is another name for the Sacrament of the Altar. Write the word <u>Eucharist</u>. _____

(3)
weak

4. God makes us strong through hearing and learning His Word. What is the name of the Book that we also call the Word of God ? _____

(11)
blood

12. When we go to the Sacrament of the Altar we, too, receive Christ's own ____ and _____.

(19)
bread
wine

20. What is the Sacrament of the Altar ? It is the true body and blood of our Lord Jesus Christ under the bread and wine. Go on to the next frame.

(27)
It, the, body, and, blood, Jesus, bread, and, wine, eat, drink, by, Christ

28. What is the Sacrament of the Altar ? __ __ ___ true ____ ___ ____ __ our ____ ____ _____ under ___ ___ __ ____, for _____ __ __ and __ _____, instituted __ _____ _____.

(34)
in remembrance of me

35. The Sacrament of the Altar is a special occasion for us to r_ _ _ _ _ _ _ _ Jesus.

Go on to the next frame.

43. The Sacrament of the Altar is a joyful celebration for us Christians and we give thanks to God. For that reason the Sacrament has also been called by the Greek name which means a "giving of thanks". That name is _____.

(4)
Bible, Holy
Bible

5. In the Bible we learn about something else which God has given us to make us stronger Christians. This extra source of strength was first given to the disciples by _____ on the night before He died.

(12)
body
blood

13. We believe Jesus really gives us His body and blood because we believe the words which He spoke to His disciples. Write these words. "Take, eat, ____ __ __ ____." " "Take, drink, ____ __ __ ____." "

Go on to frame number 21.

21. Jesus instituted (first gave) us the Sacrament of the Altar at the _____ meal which He ate with His disciples.

(28)
It is the, body and blood of, Lord Jesus Christ, the bread and wine, us Christians to eat, to drink by Christ Himself

29. What is the Sacrament of the Altar ?
__ __ ___ ____ __ ____ __ ___ ___ for ___ ____ ____ ___ ____ ___ ___, instituted __ ____ _____.

(35)
remember

36. When we remember Jesus we also remember why He lived, died, and rose again from the _____.

(43)
Eucharist

44. Holy Communion, or simply Communion, is another name for the celebration we call the _____ __ ___ Altar, the Lord's _____, or the _____.

(5)
Jesus

6. The name of the extra source of strength which Jesus gave His disciples and us is the Sacrament of the Altar. Write the name of the extra source of strength which Jesus has given us.

_____

(13)
this is my body
this is my blood

14. We believe that Jesus' own body and blood are present with the _____ and ____ in a real way.

(21)
Passover

22. What is the Sacrament of the Altar ? It is the true body and blood of our Lord Jesus Christ under the _____ and ____, instituted by Christ Himself.

(29)
Go to the last
page of this lesson
to answer 31 to check
your answer, then go
on to frame 30

30. What is the Sacrament of the Altar ?
__ __ ___ __ ___ ___ ___ __ __
____ ____ ____ ___ ___ ____ ___
____, __ __ _____ __ __ ___ __
____, _____ __ ____ _____.

(36)
grave, or
dead

37. We remember that we daily sin much against ___.

(44)
Sacrament of the,
Supper, Eucharist

45. The Lord's Supper is an Holy "Coming together" because in it we come together with our Lord. A name for the Lord's Supper which has the same meaning as "Coming together" is _____.

Go on to frame
number 7

7. Jesus was eating the Passover meal with His disciples when He gave us the

_____ __ ___ _____.

(14)
bread
wine

15. If we believe Christ's body and blood are really present with the bread and wine we believe in the R _ _ _ Presence.

(22)
bread
wine

23. Jesus said, "Take, ___, this is my body," and, "Take, _____, this is my blood."

(30)
Go to the last page of this lesson to answer 31 and check your answer, then go on to frame 31.

31. What is the Sacrament of the Altar ?
_____
_____
_____
_____.

(37)
God

38. We remember that we can have forgiveness of sins only because of _____.

(45)
Communion

46. Write four names for the celebration in which Jesus gives us His body and blood in, with, and under the bread and wine.

_____ , _____

_____ , _____

(7)
Sacrament of
the Altar
(Passover is not
the same as the
Sacrament of the
Altar.)

8.   During the Passover meal Jesus gave thanks, took bread and wine, and gave them to His _____.

(15)
Real

16. If someone believes that the bread and wine are only symbols of Christ's body and blood, or that they represent Christ's body and blood, does that person believe in the Real Presence ? Yes or No. _____

(23)
eat
drink

24. God gave us Christians the Sacrament of the Altar to eat and drink for strengthening our faith when it has become _____.

(31)
It is the true body and blood of our Lord Jesus Christ under the bread and wine, for us Christians to eat and to drink, instituted by Christ Himself.

(Go on to the next frame.)

(38)
Jesus

39. What does the Bible say we do when we "eat the bread and drink the cup" ? See I Corinthians 11:26. "we _____ ___ _____ until He comes." (Use the Revised Standard Version of the Bible.)

(46)
Sacrament of the Altar, Lord's Supper, Holy Communion, Eucharist

END OF THIS LESSON.

BIBLIOGRAPHY

A. Books

Boettcher, H[enry] J[ohn] . Instructor's Manual for Luther's Small Catechism. St. Louis: Concordia Publishing House, 1964.

Brethower, Dale M. Programmed Instruction: A Manual of Programming Techniques. Chicago: Educational Methods, Inc., 1963.

Calvin, Allen D., editor. Programmed Instruction: Bold New Venture. Bloomington, Indiana: Indiana University Press, 1969.

de Grazia, Alfred, and David A. Sohn, editors. Programs, Teachers, and Machines. New York: Bantam, 1964.

Gilbert, W. Kent, editor. Confirmation and Education. Vol. I of Yearbooks in Christian Education. Philadelphia: Fortress Press, 1969.

Girgensohn, Herbert. Teaching Luther's Catechism. Translated from the German by John W. Doberstein. II. Philadelphia: Muhlenberg Press, 1960.

Green, Edward J. The Learning Process and Programmed Instruction. New York: Holt, Rinehart and Winston, Inc., 1963.

Havighurst, Robert J. Developmental Tasks and Education. New York: Longmans, 1960

Hendershot, Carl H. Programmed Learning: A Bibliography of Programs and Presentation Devices. Bay City, Michigan: Carl H. Hendershot, 1967.

Miller, Randolph Crump. Education for Christian Living. Engelwood Cliffs, New Jersey: Prentice Hall, 1956.

Lange, Phil C., editor. Programmed Instruction: The Sixty-sixth Yearbook of the National Society for the Study of Education. Part II. Chicago: University of Chicago Press, 1967.

Lehman, Irwin J., and William A. Mehrens, editors. Education Research: Readings in Focus. New York: Holt, Rinehart and Winston, Inc., 1971.

Repp, Arthur C. Confirmation in the Lutheran Church. St. Louis: Concordia Publishing House, 1964.

Schultz, Richard J. "What is the Sacrament of the Altar ?", This is the Christian Faith, Concordia Catechism Series. Edited by Walter M. Wangerin. St. Louis: Concordia Publishing House, 1967. Pp. 208-211.

Ward, Ted and Margaret. Programmed Instruction for Theological Education by Extension. East Lansing, Michigan: Committee to Assist Missionary Education Overseas, 1970.

B. Periodicals

Skinner, B. F. "Beyond Freedom and Dignity," Psychology Today, V (August 1971), 37-76.

"Skinner's Utopia: Panacea, or Path to Hell ?", Time (September 20, 1971), 47 ff.

C. Other

Edwards, Douglas. "The World of Religion," a radio interview with Dr. David Allen Hubbard. Columbia Broadcasting System. November 7, 1971.

"Programmed Learning Workshop," Presentations at the Programmed Learning Workshop, Board for Higher Education of the Lutheran Church--Missouri Synod, Concordia Teachers College, River Forest, Illinois. August 20-22, 1971.