A Learner Verification and Revision of a Linear Programmed Text

Frank J. Schwartz

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A LEARNER VERIFICATION AND REVISION OF A LINEAR PROGRAMMED TEXT

by

Frank J. Schwartz

A Project Report
Submitted to the Faculty of The Graduate College
in partial fulfillment of the Specialist in Education Degree

Western Michigan University
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A LEARNER VERIFICATION AND REVISION OF A LINEAR PROGRAMMED TEXT

Frank J. Schwartz
Western Michigan University

A field testing procedure was implemented using a programmed text with two high school introductory business classes. The text attempted to teach concepts related to the stockmarket. Pre-test and post test measures were taken for each class. After the first class used the text, the program was revised based upon post test data. The criterion for whether or not to revise a frame sequence teaching an objective was 11% of the students failing the post test item testing that objective. The revised program was used by the second class. Comparisons were made between post tests. Twenty-eight of a possible thirty-two test items met criterion for revision on the first post test while eight test items met criterion on the second post test. The data suggest that the revised text taught more skills than the original text. Characteristic error patterns demonstrated on the post tests of the first group were not evident in the post tests of the second group.
ACKNOWLEDGEMENTS

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Frank J. Schwartz
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A LEARNER VERIFICATION AND REVISION OF A LINEAR PROGRAMMED TEXT

INTRODUCTION

This project was an attempt to demonstrate a method for revising programmed textbooks based upon errors made by students who used the text. Currently, the reasons for choosing one text over another are unclear and probably have little to do with the teaching effectiveness of the text. In 1962, the Office of Education conducted a survey directed at school superintendents which attempted to determine why certain programmed texts were chosen (HEW, 1962). The results indicated that decisions to buy texts were based upon publisher's statements or because a given programmed text was the only one available on the subject. No texts were chosen based upon proof that they taught effectively.

While many products on the market today require extensive testing before being sold to the public, most textbooks remain unverified. Less than one quarter of one percent of the total expenditures made by textbook manufacturers are reinvested into research (Markle, 1976). How much of this is used for the actual testing and verification of textbooks is debatable. Occasional public concern over unproven learning materials has had little effect on the lack of quality control demonstrated by textbook manufacturers. As of 1973, only California had mandated evaluation of published materials.
Textbook consumers need information regarding the teaching effectiveness of texts and publishers need similar information in order to improve their products. A procedure has been described by Thiagarajan (1976) that may provide the consumer and publisher with the information they need. The procedure is called Learner Verification and Revision (LVR). Learner Verification and Revision involves field testing the written material on a group representative of the target population and then analyzing error patterns made on pre and post tests by the group. The information gathered from this "error pattern analysis" allows the author to rewrite those areas that failed to teach. The text is then field tested again on a similar group and the process may be repeated until the author is comfortable with the results.

Much of the research making use of LVR techniques involves programmed texts. Programmed instruction, as defined by Pipe, is characterized by material presented in small steps which allows for a low rate of errors (Pipe, 1966). It is assumed that the fewer the errors, the lower the probability that the student will make mistakes when presented with the same material in the future. Programmed instruction is also characterized by the (a) active student participation, (b) immediate knowledge of results, and (c) self pacing. Certain advantages are gained by such an approach. Programming allows for efficient use of teacher time, effective instruction, and it allows students to correct their own work (Jacobs, et al., 1966).
Programmed materials generally fall into two basic categories - branching programs and linear programs (Pipe, 1966; Markle, 1969). Branching programs are characterized by frames presenting blocks of information followed by a multiple choice question over that material. The answer to the question determines which frame is read next. If the student chooses the correct answer s/he moves on to new material. If s/he chooses a distractor (incorrect answer) s/he is directed to another approach or repetition of the same concept. Each distractor is geared to a particular type of error or misrepresentation by the reader.

Unlike a branching program, a linear program is read in the same sequence by all readers regardless of errors made. Each frame presents a small amount of information which is followed by a question concerning that information or a question over information previously learned. The question rarely appears in the form of multiple choice and encourages the student to construct his/her answer. The correct answer always appears before the next frame. Skinner lists three characteristics that a linear program should have in order to teach effectively: (1) the student must actively respond to questions, (2) responses to questions should include a minimum of errors, (3) the student should have immediate feedback regarding the correctness of his/her responses (Markle, 1969).

In order to provide readers with immediate feedback, linear programmers have developed several formats. The format most commonly used presents frames followed by successive frames on
the same page. This "down the page" program is read like a regular textbook and answers to each frame, which are printed above the next frame, are temporarily covered by a 3 X 5 card. Examples are presented by Markle (1969) and Miller (1972). An alternative method of presenting frames is to print the frame at the top of the page and then print the answer to that frame along with the next frame at the top of the next page. This "through the book" sequence is continued throughout the book until the last page. The student is then directed to a second row of frames which appears below the first row. This format is demonstrated by Arco Publishers (1969) and by Holland and Skinner (1961). In any case, both formats lend themselves to Learner Verification and Revision.

As mentioned before, there is a need for textbooks that have been proven effective through verification and revision. Programmed texts easily lend themselves to verification. The purpose of this project is to demonstrate a Learner Verification and Revision procedure on a linear programmed text which utilizes the format of placing successive frames on successive pages. The subject of the text is the stock market.
METHOD

Subjects

Two groups of ninth and tenth grade students enrolled in introductory business classes served as subjects. Classes were located in separate high schools. However, both schools were located within the same intermediate school district in southwest Michigan. The first group consisted of 19 students and the second group consisted of 18 students. Both groups participated in the project for five consecutive school mornings, 50 minutes per morning.

Text

The object of verification and revision was a linear programmed text teaching basic concepts of the stock market. The general goals of the text included teaching what stocks and bonds are, why they are sold, and where to trade them. A complete list of the program objectives and corresponding pre and post test questions may be found in Appendix A. Since the target group consisted of ninth and tenth grade students, the objectives were written at a level thought to be appropriate for this group.

The actual writing of the text followed, with some modifications, procedures described by Pipe in his book, Practical Programming (Pipe, 1966). The following steps taken were:

1. A topic was selected - the stock market.
2. A general statement was written. Part of this has been stated earlier as the "general goal". Also included in the general statement were the pre-skills required of the student before beginning the program. The only skill needed for completing the program was the ability to read at the 5th grade level. The fifth grade level was chosen because it is considered to be the Consumer Functional Level by the State of Michigan. Readability was assessed using Fry's method (Fry, 1968).

3. Specific objectives were written for each concept. For each objective, one or two text questions were developed. In all, thirty-one objectives and thirty-two "fill in the blank" test questions were used.

4. After all objectives were written, they were arranged in sequential order. The sequence of the objectives were determined by two basic criteria:

   a) Objectives that were needed as prerequisites to others were taught first. For example, one must learn what a corporation is before s/he can learn what common stock is.

   b) Objectives that were not prerequisites to others were placed in what seemed to be a logical order. For example, it seemed logical to teach the definition of Individual Ownership before teaching the definition of Partnership even though the knowledge of the
former is not needed to learn the latter.

5. From the outline that resulted from sequencing the objectives, the text was written. The general procedure for writing frames for each objective included several of the following steps:
   a) The definition of the concept was given.
   b) Examples of the concept were presented.
   c) Non-examples were presented.
   d) The concept was given and the student was asked to give an example.
   e) An example was given and the student was asked to name the concept.
   f) The terminal frame was presented. This frame was similar in form to questions on the pre and post tests.
   g) Review frames were introduced periodically throughout the text for concepts that were introduced once and never used as prerequisites for new concepts.

Each frame ended with a question and room for the student to write his/her response. A through the book format was used. The next frame, which appeared on the following page, was preceded by the answer to the previous frame. This provided the student immediate feedback to his/her response. The original (first group) text contained a total of 145 frames while the revised (second group) text contained 147 frames. Appendix C contains the revised text.
Evaluation Materials

Every student in each of the two groups was administered a pretest before reading the text and an identical post test after reading the text. No feedback or knowledge of results was given to the students after taking the pretest. All items were presented at the Knowledge Level of Bloom's Taxonomy (Bloom, 1956; Gronlund, 1970; Vargas, 1972) and are listed in Appendix A.

It was assumed that all students (ninth and tenth graders) could read at the 5th grade level. That is, from past experience with their students, the teachers felt that all students participating could read at this level. Therefore, no prerequisite reading test was administered.

Procedure

At the beginning of their business class, students in the first group were presented with the pretest by their teacher and were instructed to try to answer each of the 32 questions. After 30 minutes all tests were collected.

On the following day, the programmed texts were distributed and the teacher gave directions on their use. Students were asked to write their responses to the questions following each frame. After a brief explanation on how to use the text, the students were given the remainder of the period to read it. The two class periods which met on the following two days were also used for reading the text. At the end of each reading session, texts were
collected by the teacher.

At the beginning of the fifth day, the post test was administered and students were given 30 minutes to complete the test. Feedback and grades were given from the results of the post test.

The procedure was implemented by the teacher over five consecutive week days. Although the experimenter was not present in the classroom at any time, the teacher was contacted daily to check on the progress of the experiment.

Completed texts were examined to determine the extent to which students were writing answers to frames. In order to be considered for any of the following results, a minimum of 95% of the frames had to be answered in writing for each text. All texts met this criteria.

Pretest and post test scores were compared for each student. In addition, an error pattern analysis of text items was performed in order to identify known concepts, learned concepts, and failed concepts. Each test item was treated as a different concept even though some test items covered similar material. A known concept was defined as the corresponding test question scored correctly on the pretest. A learned concept was defined as the corresponding question failed on the pretest and passed on the post test. A failed concept was defined as the corresponding question failed on both the pre and post tests. Items that were passed on the pretest but failed on the post test were also treated as failed.

Using these data, the text was revised. The number and percent
of students scoring known, learned, and failed was determined for each concept. If any given concept was scored as failed by more than two students (11% of the class), the frames teaching that concept were revised. The revision of frames for a given failed concept were based on characteristic error patterns demonstrated by several students. Examples of error patterns and their corresponding revisions included:

1. One test question asked: A person owns a business if s/he ______________ or ______________ something for money. The blanks should be filled with the words: does and sells. The error pattern on this question consisted of students using the words: makes, works, and repairs. Frames teaching this concept were revised by adding examples of people doing and selling things for money. Frames were also changed so as to require the students to write the word "does" more frequently.

2. Another question asked who was responsible for corporate debts if a corporation went bankrupt. The answer was "no one" but many students indicated that the common stockholders were responsible. Frames were revised requiring the student to answer "no one" to specific examples of corporations going bankrupt.

3. On a question asking who is second in line for assets left by bankrupt corporations, several students answered incorrectly by citing bondholders and common
stockholders. The answer is the preferred stockholders. In this case, revisions were made by adding frames which cited bondholders and common stockholders as non-examples.

4. On a question that asked who gets dividends most frequently, many students indicated common stockholders while the answer was preferred stockholders. Revisions for this concept consisted of adding a frame which cited common stockholders as a non-example. Also, other frames consisting of correct examples were added.

5. The most common error pattern was made to the question: One share of common stock represents one piece of _____ in a corporation. Students answered incorrectly by filling in the blank with the word "company" while the correct answer was "ownership". The revision consisted of adding review frames and using examples of common stock as ownership.

In addition to the error patterns cited above, several test items were answered with a variety of incorrect responses that implied no consistent pattern. In other words, answers seemed to be random. In these cases, the corresponding sequence of frames were rewritten using one or more of the following tactics:

1. More examples and non-examples were introduced.
2. Review frames were added throughout the text.
3. Frames subjectively judged by the author to have been unessential or misleading were eliminated. Some indication
of whether or not a frame was confusing was found by examining incorrect answers within the text.

After the text was revised and reprinted, it was administered to the second group in the same manner that it was administered to the first group. That is, first students were presented with the pretest and were given 30 minutes to complete it. On the following day the teacher distributed the revised texts and gave instructions on their use. Students used the texts, writing their responses to frames, for the remainder of that session as well as the following two sessions. Finally, students were given 30 minutes to complete the post test. Feedback and grades were given from the results of the post test. The same types of data were gathered from the second group's tests as described for the first group.

Reliability

An answer key was developed for the pre and post test previous to checking either. The author and another person independently corrected each test. Graders marked their score for each item on separate score sheets. If a written answer did not appear on the answer sheet, accuracy was judged by the grader. Scoring accuracy for each text was computed by dividing the number of agreements by the number of disagreements and then multiplying by 100.
RESULTS

Scoring agreement on graded tests ranged from 97% to 100% with a mean of 99%. Of the 74 pre and post tests graded, the graders disagreed on one question from each of five tests. Therefore, the tests were considered to be graded accurately.

Appendix B provides a comparison of pre and post test results for both groups. For a student in the first group, the mean score on the pretest was 3.9 ranging from 0 to 8, out of a possible 32. The mean score on the post test was 20.1 and ranged from 7 to 28. All students in the first group scored at least 7 points higher on the post test and the mean increase was 16.2.

For the first group, 28 items out of a possible 32 were failed by more than two students. Corresponding frames from the text were revised as previously described.

The text presented to the first group contained a total of 145 frames of which 72 were revised and 2 added for the second group. The second group text contained a total of 147 frames.

The mean score on the pretest for the second group was 6.7 and ranged from 3 to 10. The mean score on the post test was 27.7 and ranged from 20 to 31. All students in the second group scored at least 11 points higher on the post test with a mean increase of 21.

For the second group, 8 items (out of a possible 32) were failed on the post test by more than 2 students. If the text were
to be revised again, frames teaching these items would be improved upon.

A comparison of the first and second group scores indicates that the second group students scored an average of 2.8 points higher on the pretest and an average of 7.6 points higher on the post test. The range for the second group on the post test was smaller by 10 points. Failed items which met criteria for revision occurred 22 more times with the first group than with the second group.

One obvious error pattern was identified in the second group results that was not found in the first group results. On test item number 3, the students were presented with an example of an individual ownership and were asked to identify it as such. Rather than writing "Individual Ownership", many students wrote, "Individual".

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DISCUSSION

The results of this project indicate that a programmed text can be successfully revised on the basis of empirical data gathered from a field testing. The test results from the first group were used directly for the revision of the text that was administered to the second group. Error patterns or characteristic errors made by several students in the presence of the same sequence of frames were identified. As a result, fewer concepts were failed by the second group.

It should be noted that the second group scored an average of 2.8 points higher on the pretest than students from the first group. This may indicate that the second group students knew more about the subject matter before participating in the study and thus were apt to score higher on the post test than students from the first group. This may have been a factor. However, it is not very probable that the small amount of previous knowledge demonstrated by the second group students could account for post test scores. Additionally, post test ranges were reduced by an average of 10 points which indicates stability.

In any case, error patterns that were identified from the first group post test results were not apparent in the second group results, with the exception of one item. The purpose of the Learner Verification and Revision procedure is to improve the text by rewriting or adding to material that failed to teach properly.
It might be argued that the process was time consuming in terms of time expended during the taking of the pretests. However, this time was more than recovered when the remediation time is reduced for future students benefitting from revisions. It should also be noted that little effort was required to conduct the verification making the procedure feasible for authors and publishers.

In summary, this project demonstrated a Learner Verification and Revision technique for field testing programmed texts. It seems feasible that other forms of printed material designed to teach could be improved using similar techniques. Traditionally, writing textbooks has been considered an art - Learner Verification and Revision may help writing approach a science.
REFERENCES


APPENDIX A

PROGRAM OBJECTIVES AND CORRESPONDING TEST QUESTIONS
Program Objectives and Corresponding Test Questions

1. The student will identify the two ways of running a business.
   Question: A person owns a business if he/she ________ or ________ something for money.

2. Given an example of an Individual Ownership, the student will identify it as such.
   Question: Tom owns a lawn cutting service. What form of business is this?

3. Given an example of a Partnership, the student will identify it as such.
   Question: Midwestern Baby Products is owned by Tim, Sally, and George. There are no stockholders. What form of business is this?

4. The student will identify the owners of corporations.
   Question: The ___________ stockholders are the owners of corporations.
   Question: One share of common stock represents one piece of ___________ in a corporation.

5. The student will identify who has the right to collect dividends.
   Question: Who has the right to collect dividends?

6. The student will identify dividends as profits.
   Question: Dividends can be described as company _________.

7. The student will identify which stockholders are entitled to vote in company decisions.
Question: The __________ stockholders can vote in making major company decisions.

8. The student will describe how many votes a stockholder may get when making a company decision.

Question: The number of votes that a person gets in making a company decision in a corporation is equal to the number of __________.

9. The student will identify stock certificates as representative of stockholder's interests in the corporation.

Question: What do stockholders get in order to represent their shares of stock?

10. The student will identify examples of assets as assets.

Question: Land, money, machinery, and buildings can all be described as company __________.

11. Given a description of bankruptcy, the student will identify it as such.

Question: A business is __________ when it no longer is making enough money to stay open and it must close.

12. The student will identify no one as responsible for unpaid corporate debts following bankruptcy.

Question: When a corporation closes because it is no longer able to make enough money to stay open, who must pay off the debts after all of it's money is gone?

13. The student will identify the owner as responsible for all debts following bankruptcy of an individual ownership.
Question: When an individual business owner has to close because he/she is no longer able to make enough money, who must pay all the debts?

14. The student will identify the partners as responsible for all debts following the bankruptcy of a partnership.

Question: When a partnership is forced to close because it is no longer making enough money, who must pay the debts with their own money?

15. The student will identify the minimum age requirement for buying stocks or bonds.

Question: How old must you be to buy stocks or bonds?

16. The student will identify the corporation as the type of business who must pay the most taxes.

Question: What form of business must pay the most taxes?

17. The student will describe bondholders as lending money to corporations.

Question: Bondholders actually __________ money to corporations.

18. The student will identify the interest paid to bondholders as interest.

Question: What is the additional money called that corporations pay to bondholders?

19. The student will identify the bondholders as the first to have access to company assets following bankruptcy.

Question: If a corporation goes out of business, who gets paid off first?
20. The student will identify the preferred stockholders as the second to have access to company assets following bankruptcy.
   Question: If a corporation goes out of business, who gets paid off second?

21. The student will identify the preferred stockholders as collecting dividends more often.
   Question: Who collects dividends more often?

22. The student will identify the preferred stockholders as those collecting the largest dividends.
   Question: Who generally collects the largest dividends?

23. The student will indicate where money from taxes goes.
   Question: Taxes can be described as money paid to the ________.

24. The student will identify the common stockholder as the last to have access to corporate assets following bankruptcy.
   Question: If a corporation goes out of business, who gets paid off last?

25. The student will estimate the duration of a stock transaction to be 5 - 10 minutes.
   Question: When you buy or sell stock, how long does it usually take for the order to be carried out?

26. The student will describe the stockbroker as the middleman in a transaction.
   Question: Who can be described as the middleman between buyer and seller?

27. The student will indicate where floor brokers are located.
Question: Where do floor brokers trade stock?

28. The student will identify the New York Stock Exchange as the most active exchange for trading stock.

Question: The place where most of the stock in the United States is traded is the __________ ________ ________.

29. The student will note that returning a stock certificate is a prerequisite to receiving the proceeds from a sale of securities.

Question: Before you receive your money for selling your stock, you must return the __________ ________.

30. Given the definition of a sell order, the student will identify it as such.

Question: An order to sell stock is called a __________ ________.

31. The student will indicate that securities must be paid for in 5 business days.

Question: If you buy stock, how long do you have to pay for it?
APPENDIX B

PRE AND POST TEST SCORES FOR THE FIRST AND SECOND GROUP
Pre and Post Test Scores for the First and Second Group

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Pre and post tests consisted of 32 items.
Pre and Post Test Scores for the First and Second Group (Cont.)

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APPENDIX C

REVISED PROGRAMMED TEXT USED WITH THE SECOND GROUP
THE STOCK MARKET

Part One
HOW TO USE THIS BOOK

This book is probably different than any other book you have read. Start the book by reading Frame 1. When you are done reading Frame 1, turn the page and read Frame 2. Frame 2 will ask you to write your answer to a question. After you have written your answer, turn the page and the correct answer will be printed above the next frame. Continue on through the book, writing your answer to each frame. If you make a mistake, don't worry about it. Just continue on through the book. If you make an honest effort to answer each question correctly, you may surprise yourself with how much you have learned.

Good luck on part 1.
In chapter one, we are going to talk about businesses. We will discuss what a business is and the three forms of business ownership. We will also learn that common stockholders own corporations and have the rights to collect dividends and to make major company decisions.

Please be sure to read each frame and write your answer to each question that is asked.

TURN THE PAGE TO FRAME 2

Answer to Frame Number 51: money

Frame Number: 52

But there is not enough room in the corporation's factory to make more guitars. They will have to buy a new __________ so they will have enough room to make more guitars.

(your answer)

Answer to Frame Number 102: preferred stockholders bondholders

Frame Number: 103

Helen owns a bond from the American Motors Corporation. Nancy owns preferred stock from the same company.

If American Motors went bankrupt, who would be paid off second? Why?
Frame Number: 2

A person owns a business if he/she **does** something for money or **sells** something for money.

Sam fixes cars for a price. He owns a business because he **sells** something for money.

(your answer)

---

Answer to Frame Number 52: building or factory

---

Frame Number: 53

A new building costs money and the corporation did not want to borrow it. To raise money, they sold ownership, or in other words, common **s**.

(your answer)

---

Answer to Frame Number 103: Nancy - she owns preferred stock and preferred stockholders are paid off after the bondholders.

---

Frame Number: 104

When a company goes bankrupt, who gets paid off first?

(your answer)
Frame Number: 3
Sally makes bird houses and sells them for $5.00 each. She owns a business because she ______ something for money.
(your answer)

Answer to Frame Number 53: stock

Frame Number: 54
The corporation wanted to raise money, so they sold ______ ______ to anyone who wanted to buy it.
(fill in the blanks)

Answer to Frame Number 104: the bondholders

Frame Number: 105
When a corporation goes bankrupt, who gets paid off second? (Not the common stockholders.)
(your answer)
Answer to Frame Number 3: sells

Frame Number: 4

Tom paints houses for money. He owns a business because he __________________________ something for money.

(your answer)

Answer to Frame Number 54: common stock

Frame Number: 55

Why did Greg's Guitar Corporation sell common stock?

(your answer)

Answer to Frame Number 105: the preferred stockholders

Chapter 7

Frame Number: 106

In chapter 6 we learned that preferred stockholders usually get higher dividends, almost always get paid dividends, and are second in line to get their money if the corporation goes bankrupt.

GO ON TO THE NEXT FRAME
Answer to Frame Number 4: DOES

Frame Number: 5

A person owns a business if he/she sells or something for money.

(your answer)

Answer to Frame Number 55: to raise money

Frame Number: 56

One share of common stock represents one piece of ____________________ in a corporation.

(fill in the blank)

Answer to Frame Number 106: no answer needed.

Frame Number: 107

Now we are going to talk a little more about common stock. From what you know already about preferred stock and bonds, this chapter will be easy. One share of common stock represents one piece of _______________ in a corporation.

(your answer)
Answer to Frame Number 5: does

Frame Number: 6
You own a business if you ______ or ______ something for money.

(fill in the blanks)

Answer to Frame Number 56: ownership

Frame Number: 57
Other things like materials, land or machines could be bought with the money made from selling ownership, or in other words, c__________ ____________.

(your answer)

Answer to Frame Number 107: ownership

Frame Number: 108
If a corporation went bankrupt, bondholders would be paid off first and preferred stockholders would be paid off second. Take a guess at who would be paid off last.

(your guess)
Frame Number: 7

So, in order to own a business, you must either do something or sell something for money. However, there is one more thing to remember. You do not own a business if you are working for someone else.

Jim works as a farm helper for $2.70 per hour. Now, he is doing something, and he does get money. However, he does not own a business. Why not?

Answer to Frame Number 57: common stock

Frame Number: 58

By buying the new building, Greg's Guitar Corporation will probably make more p__________, which might give the stockholders more dividends.

(your answer)

Answer to Frame Number 108: common stockholders

Frame Number: 109

Who would be second? (Not the landholders).

(your answer)
Frame Number: 7
Answer to Frame Number 7: he is working for someone else.

Frame Number: 8
You do not own a business if you are ____________________________ someone else.

(fill in the blanks)

Frame Number: 58
Answer to Frame Number 58: profits

Frame Number: 59
Almost anyone could buy common stock from Greg's Guitar Corporation. However, they must be at least _______ years old, which is the same as the drinking age.

(fill in the blank)

Frame Number: 109
Answer to Frame Number 109: the preferred stockholders

Frame Number: 110
When a corporation goes bankrupt, it must sell all of its assets to pay its debts. First, it must pay off the bondholders. Second, it must pay off the preferred stockholders. Whatever is left goes to the owners of the corporation who are the _________.

(your answer)
Answer to Frame Number 8: working for

Frame Number: 9

A person who owns a business _________________ or sells something for money and is not _________________ for someone else.

______________________________

(your answers)

Answer to Frame Number 59: 18

Frame Number: 60

Could someone who is 17 or younger buy stock? Why or why not?

______________________________

______________________________

Answer to Frame Number 110: common stockholders

Frame Number: 111

Jane owned 100 shares of common stock in the "Slick Slide Rule" corporation. The corporation went bankrupt. Who got paid off before her?

______________________________

(your answer)
Answer to Frame Number 9: does working

Frame Number: 10

If one person owns a business, the form of business is called an Individual Ownership. Sam owns a gas station called, "Sam's Gas Station." The form of business in this case is an Individual Ownership because there is ______ owner.

(your answer)

Answer to Frame Number 60: No, you must be 18 or older to buy stock.

Frame Number: 61

So, let's say you are 18 or older and you want to buy stock. If you wanted to buy land, you might go to a land broker. But you do not want to buy land, you want to buy stock so you go to a stockbroker.

(your answer)

Answer to Frame Number 111: Preferred stockholders and bondholders.

Frame Number: 112

As we mentioned earlier, common stockholders sometimes get dividends. Which stockholders usually get the higher dividends?

(your answer)
Frame Number: 11

Bruce's Bump Shop is owned by only Bruce. What form business does Bruce own?

(your answer)

Answer to Frame Number 61: stockbroker

Frame Number: 62

A stockbroker buys and sells ____________ and bonds. He can be described as the middleman between buyer and seller.

(your answer)

Answer to Frame Number 112: Preferred

Frame Number: 113

So, who usually gets lower dividends?

(your answer)
Answer to Frame Number 11: individual ownership

Frame Number: 12

Sally and Jim own a drug store. This is not a form of individual ownership because ______________________________

(fill in the blanks)

Answer to Frame Number 62: stocks

Frame Number: 63

Who can be described as the middleman between buyer and seller?

(your answer)

Answer to Frame Number 113: common stockholders

Frame Number: 114


__________________________________________

__________________________________________
Frame Number: 13

When there is more than one owner, the form of business is called a Partnership. Also, there are no stockholders in a partnership. (We will tell you what a stockholder is later.) Sally and Jim own a drug store. What form of business do they own?

(your answer)

Answer to Frame Number 63: the stockbroker

Frame Number: 64

Now you know why a company sells common stock and who can buy it. Now we will talk about taxes. Almost everybody pays taxes and so do businesses. But some businesses pay more taxes than others. Read this chapter and it will become obvious that corporations pay the most taxes. Taxes can be described as money paid to the

(g)

Answer to Frame Number 114: Jim because the common stockholders are the owners of the corporation.

Frame Number: 115

Who would probably get the smallest dividends?

(your answer)
Ed owns "Ed's Junk Yard". In this business, Ed collects junk, like broken washing machines. He then fixes the junk and sells it. Ed's Junk Yard is not a partnership because there is only ____________ owner.

(your answer)

The government collects taxes to pay for many of the services that the government provides. Taxes can be described as money paid to the ____________.

(fill in the blank)

Jim - because common stock dividends are usually smaller than preferred stock dividends.

Who would not get a dividend as often?

(your answer)
Answer to Frame 14: one

Frame Number: 15

What form of business is Ed's Junk Yard?

(your answer)

Answer to Frame Number 65: government

Frame Number: 66

Our State and Federal governments pay for a lot of things for us. All of these things cost a lot of ____________.

(your answer)

Answer to Frame Number 116: Jim - preferred stockholders get dividends more frequently.

Chapter 8

Frame Number: 117

Dividends are profit. And you get dividends from owning preferred or common stock. You get interest by owning bonds. All this you have learned in previous chapters. Now we will talk about the actual buying and selling of stock. You will learn more about that middleman who buys and sells stock for you - the stockbroker.

GO ON TO THE NEXT FRAME
Frame Number: 16

Ted and Mark own a movie theatre. What form of business is this?

(your answer)

Answer to Frame Number 66: money

Frame Number: 67

In order to pay for these things, everyone must pay ________ to the government.

(your answer)

Answer to Frame Number 117: No answer needed.

Frame Number: 118

Say you lived in Detroit and you wanted to buy 100 shares of Shell Oil Corporation common stock. Now, let us say that there is a person in Chicago who wants to sell 100 shares of the same stock. You could buy your 100 shares from that person, but that person lives so far away. Besides, you probably wouldn't even know about that other person and his/her stock. Your problem would be solved if you knew a _______broker.

(your answer)
Frame Number: 17

What form of business is Pete's Gun Shop?

(Your answer)

Frame Number: 68

Businesses also pay taxes to the __________________.

(fill in the blank)

Frame Number: 118

If you wanted to buy some stock, the ________________
will find a seller for you.

(fill in the blank)
Frame Number: 18

Another form of business is a corporation and it is owned by common stockholders. What were the other two forms of business that are not owned by stockholders?

(your answers)

Frame Number: 69

The three forms of business that have to pay taxes are: individual ownerships, partnerships, and c___________________.

(your answer)

Frame Number: 120

If you want to sell some stock, the stockbroker will find a__________________. And he will carry out your order in about 5-10 minutes.

(your answer)
Frame Number: 19

If Ed went through the process of changing his business to a corporation, he would no longer be the owner. The new owners would be the common stockholders. Stockholders are the people who own, or hold _________.

(your answer)

Frame Number: 70

All taxes are paid to the ___________________.

(fill in the blank)

Frame Number: 121

The stockbroker acts as a middleman between buyer and seller. How long does it generally take the stockbroker to carry out your order?

(your answer)
One share of common stock is the same as one piece of ownership of the company. Often, when a company becomes a corporation, the ownership is broken up into millions of pieces and sold to anyone who wants to buy them. The people who buy these pieces of ownership, or in other words, shares of common stock are called the common _________________.

(your answer)

You may be wondering what form of business pays the most taxes. The answer is the form of business that is owned by stockholders. Which form of business pays the most taxes?

(your answer)

In other words, since you cannot find a buyer or a seller for stocks, you need a broker to trade for you. Since the broker is between the buyer and seller we call him a m __________ man.

(your answer)
Frame Number: 21

Tom bought 100 pieces of ownership of Ed's Junk Yark Corporation.
Another way to say this is: Tom bought 100 _________ of common stock in Ed's Junk Yark Corporation.

(fill in the blank)

Frame Number: 72

Corporations pay the most _________.

(fill in the blank)

Frame Number: 123

Say you wanted to buy 100 shares of Ford Motor Corporation common stock. You would call your _________ and ask him/her to buy 100 shares of Ford for you.

(your answer)
Frame Number: 22

Who are the owners of a corporation?

(your answer)

Frame Number: 73

So, corporations pay the most taxes. Now you will learn another way that corporations can raise money. The first way you learned was by selling ownership, or common stock. The second way you will learn is by selling bonds. Bondholders lend money to corporations and the corporations pay bondholders interest.

GO ON TO THE NEXT FRAME

Frame Number: 124

After you have given your order to your stockbroker, he/she will send your order to another person working for the stockbroker. This person works for the stockbroker on the stock exchange floor. Since he works on the "floor", he is called a floorbroker.

(your answer)
Frame Number: 23

As owners of a corporation, common stockholders have certain rights. Any owner of a company has the right to make a profit (money) and so do common stockholders. Common stockholders have the right to share in company p_____________________.

(fill in the blank)

Frame Number: 74

Up until now, we have learned that corporations can raise money by selling ____________________________.

(your answer)

Frame Number: 124: floor broker

Frame Number: 125

After your stockbroker sends your order to his ___________, he/she will find another floor broker who wants to sell 100 shares of Ford.

(your answer)
Frame Number: 24

The profits that are paid to stockholders are called **dividends**. Not all companies pay dividends to stockholders, but many do. The right to collect dividends is a very important right. The stockholder who collects dividends is sharing in the company's ________________.

(your answer)

Frame Number: 75

Now we shall discuss bonds. Remember Greg's Guitar Corporation. Their main problem was that they needed another building and they didn't have the money to pay for it. So they sold **common stock**. One share of common stock represents ____________.

(your answer)

Frame Number: 126

The two floor brokers decide on a price for the stock. Your floor broker buys the stock and sends it to your ________________.

(fill in the blank)
Collecting dividends (profit) is one right. Another right of a common stockholder is the right to vote in company decisions. If you owned a company, you would make all the major decisions like who you would hire, where you would put your business, etc. But, common stockholders are the owners of a corporation - so who do you think makes the major decisions for corporations?

They could have used another method to raise money - they could have sold bonds. Corporations use bonds to borrow m___.

Your stockbroker then sends you a bill for the stock. You must ______ the bill within 5 days.
Frame Number: 26

Since the common stockholders are the owners, they make the major decisions. But there are usually many stockholders for each corporation - sometimes there are thousands of stockholders for one corporation. You might be wondering how can so many people get together and agree on one decision? That is a good question and it will be answered later.

But for now, answer this question: Who has the right to vote in major company decisions?

(your answer)

Frame Number: 77

Greg's Guitar Corporation could have issued bonds to anyone who wanted one, as long as they were 18 years old or older. If you bought a bond, you would give the corporation money and they would give you a bond certificate. The corporation pays you additional money for owning a bond. This additional money is called I _______.

(your answer)

Frame Number: 128

If you buy stock how long do you have to pay for it?

(your answer)
Frame Number: 27

If you owned common stock, you would get one vote for every share you owned.
Linda owned 100 shares of Ed's Junk Yard Corporation and there was a decision to be make. The people in the corporation were trying to decide if they should open up a new junk yard in another city. Linda thought this was a good idea and she wanted to vote yes.
How many votes did Linda get?

(your answer)

Frame Number: 78

What is the additional money called that corporations pay to bondholders?

(your answer)

Frame Number: 129

Actually, you get 5 business days to pay for your stock. Business days are Monday through Friday. So, if you ordered stock on Tuesday, you would have until the next Tuesday to pay for it. If you ordered stock on a Monday, how long would you have to pay for it.

(your answer)
Answer to Frame Number 27: 100 - you get one vote for every share of stock that you own.

Frame Number: 28

So, the common stockholders have two basic rights:

a) the right to one vote for each share of common stock that they own.

b) the right to collect ______________.

(your answer)

Answer to Frame Number 78: interest

Frame Number: 79

This is how it works. After a certain period of time, you must give the bond back to the corporation. When you give it back, the corporation will give you your m ________ back.

(your answer)

Answer to Frame Number 129: 5 business days or until next Monday

Frame Number: 130

Now, you may be wondering where these floor brokers gather to trade stock. Remember that each floor broker works for __________ brokers who are from different parts of the country.

(your answer)
Frame Number: 29

Which right allows the common stockholders to help make major decisions?

Answer to Frame Number 79: money

Frame Number: 80

In addition to getting your money back, you will get interest. Interest is the money that the corporation gives you for buying their __________.

(your answer)

Answer to Frame Number 130: stockbrokers

Frame Number: 131

However, all the floor brokers must be at the same place so they can trade stock. The place where they gather is called a stock exchange.

(your answer)
Answer to Frame Number 29: the right to one vote for each share of stock that is owned

Frame Number: 30

Dividends can be described as company _______.

(fill in the blanks)

Answer to Frame Number 80: bonds

Answer to Frame Number 81

For example, Sam bought a bond from Greg's Guitar Corporation. He gave the corporation $100.00 and the corporation gave him a bond certificate. After one year, Sam gave the bond back to the corporation and in return, the corporation gave him his $100.00 back plus $8.00, which is a total of $108.00. What is the additional $8.00 called?

(your answer)

Answer to Frame Number 131: stock exchange

Frame Number: 132

Floor brokers trade stock at the _________.

(your answer)
Frame Number: 31

The more shares you own - the more votes you get in making major decisions. Also, the more shares you own, the more pieces of __________ you have.

(your answer)

Frame Number: 82

If you wanted to buy a car, but did not have enough money, a bank would lend you the money. Greg's Guitar Corporation did not have enough money to buy a building, so they sold bonds. Sam bought a bond which is 1____________ money to the corporation.

(your answer)

Frame Number: 132

Answer to Frame Number 132: stock exchange

Frame Number: 133

The biggest place where stock in the United States is traded is called the N___ Y___ Stock __________.

(your answer)
Answer to Frame Number 31: ownership

Frame Number: 32

Who owns more of Ed's Junk Corporation. Tom, who has 44 shares of stock, or Jim who has 45 shares of common stock? Why?

Answer to Frame Number 82: lending

Frame Number: 83

When you buy a bond, you are actually __________ money to the corporation __________ money.

(your answer)

Answer to Frame Number 133: New York Stock Exchange

Frame Number: 134

However, the New York Stock Exchange is not the only stock exchange. There are many __________ __________s all over the country.

(your answer)
Answer to Frame Number 32: Jim, because he owns more stock.

Frame Number: 33

Each share of stock equals one ________ of ownership

(your answer)

Answer to Frame Number 83: lending

Frame Number: 84

For the privilege of borrowing your money, the corporation pays you ________ in addition to the money you gave them.

(your answer)

Answer to Frame Number 134: stock exchanges

Frame Number: 135

When you tell your broker that you want to buy stock, it is called a buy order. When you tell your broker to sell stock, it is called a ______ ________.

(your answer)
Frame Number: 34

When you buy stock, you receive a stock certificate. A stock certificate is a piece of paper that tells you what company you own and how many shares you own.
A stock ____________ represents your shares of stock.

(fill in the blank)

Frame Number: 85

Now, what would happen if Sam bought a bond from a corporation and then the corporation went bankrupt? In other words, Sam has just lent the company money and the company has spent it. But then it goes out of business. To pay Sam back, the corporation would have to sell all of its materials and land which are called

(your answer)

Frame Number: 136

Write the letters of the following sentences in the order that they would happen for a buy order.

a) the broker sends you the bill
b) the broker sends the order to the stock exchange
c) you get your stock certificates
d) you ask your broker to buy you the stock
e) the floor broker at the stock exchange buys your stock

1st __d__ 2nd ____ 3rd ____ 4th ____ 5th ____
Think back to what we said about dividends. Before we said that dividends were company _________ given to the stockholders.

(your answer)

From the money that the corporation got from selling its assets, they would have to pay off the bondholders first. Since Sam is a bondholder, when would he get paid off? First? Second? Third?

(your answer)

A sell order works very much the same way. First you tell your broker that you want to sell some stock. This is a ______ order.

(your answer)
Frame Number: 36

What do stockholders get in order to represent their shares of stock?

(your answer)

Frame Number: 87

It can be said that when a company goes bankrupt, the __________ holders get paid off first.

(your answer)

Frame Number: 138

Then, your broker tells his ________________ at the stock exchange to sell the stock.

(fill in the blank)
Chapter 2

Frame Number: 37

In chapter 2 we will learn that personal assets are the things that we own. We will then discuss what happens to the owners of businesses when their company goes out of business. The owners of a partnership and individual ownership must pay off their business debts with their personal assets. The owners of a corporation (the common stockholders) do not have to pay off their business debts with their personal assets.

GO ON TO THE NEXT FRAME

Chapter 6

Frame Number: 88

So far we have talked about two ways that a corporation can raise money. It can sell common stock or it can sell bonds. When a corporation sells common stock, it is actually selling ownership. When a corporation sells bonds, it is actually borrowing money from those who buy the bonds. When they pay the bondholders back, the corporations must also pay additional money - interest.

In this chapter, we will learn a third way for a corporation to get money - by selling Preferred Stock.

Who gets paid off first if a corporation goes bankrupt?

(your answer)

Frame Number: 139

The floor broker sells the stock to another floor broker who wants to buy it. Then you send the stock c___________ to the broker within 5 days.
Frame Number: 38

All of the following things are owned by a person and are called **Personal Assets**.
- land owned by a person
- money owned by a person
- a house owned by a person
- furniture owned by a person

Why would land owned by a corporation not be a personal asset?

Answer to Frame Number 88: the bondholders

Frame Number: 89

The owners of a corporation are the __________, not the preferred stockholders.

(your answer)

Answer to Frame Number 139: certificate

Frame Number: 140

After you send the certificate, the broker will send you a check for the stock you just sold. What do you have to send to the broker before he will send you your money?

(your answer)
Answer to Frame Number 38: It is not owned by a person - a personal asset is owned by a person, not by a company.

Frame Number: 39

Give an example of a personal asset.

Answer to Frame Number 89: common stockholders

Frame Number: 90

Do not make the mistake of thinking that p________________ stockholders are the owners of corporations. They are not. The common stockholders are the owners.

(your answer)

Answer to Frame Number 140: the stock certificate

Frame Number: 141

Write the letters of the following sentences in the order that they would happen for a sell order.

a) you give the stock certificate to your broker within 5 days.
b) the broker sends you a check
c) you tell your broker what stock you want to sell
d) the broker sends the sell order to the stock exchange

1st ____ 2nd ____ 3rd ____ 4th ____
Answer to Frame Number 39: any example that is a thing that is owned by a person

Frame Number: 40

We will talk more about assets later. But now, think about what happens when a company is no longer making enough money to stay open. For example, if no one came to buy junk from Ed's Junk Yard, the business would have to close. When businesses are forced to close, it is often called going bankrupt. Give an example of a business going bankrupt (your example does not have to be real)

Answer to Frame Number 90: preferred

Frame Number: 91

Owning preferred stock is very much like owning a bond. You give the corporation money and they give you a preferred certificate.

(Your answer)

Answer to Frame Number 141: 1st c 2nd d 3rd a 4th b

Frame Number: 142

This may seem like a difficult way to buy and sell stock. But actually, it is very simple and it all happens very quickly. If you were to call your broker to sell some stock, he and his specialist could do it all within 5 minutes. The stock b is very helpful when buying stock.

(Your answer)
Frame Number: 40

Any example in which a business no longer makes enough money to stay in business.

Frame Number: 41

Many times when a business goes bankrupt, the business owes people money. For example, just before Ed's Junk yard went bankrupt, the company bought a new truck to carry junk with. But they ran out of money. The money that Ed's Junk Yard owes on the truck is called a debt. If you had sold Ed's Junk Yard a truck and they never paid for it, you would probably be quite angry.

What do you call it when a business owes someone money?

(your answer)

Frame Number: 91

Stock

Frame Number: 92

When you buy a bond, the company pays you interest for the use of your money. When you buy preferred stock, the company also pays you additional money. This money is called divi____.

(your answer)

Frame Number: 142

Broker

Frame Number: 143

However, the stockbroker does not buy and sell your stock for free. He charges you a fee for his help. This fee is shared between the stockbroker and the floor broker. Where does the floor broker trade stock?

(your answer)
Answer to Frame Number 41: a debt

Frame Number: 42
Make up an example of a debt.

Answer to Frame Number 92: dividends

Frame Number: 93
If you own _________ stock, you will probably collect dividends more often than if you owned common stock.

(your answer)

Answer to Frame Number 143: on a stock exchange

Frame Number: 144
The broker's fee is quite small and is worth it. How long do you have to pay him/her?

(your answer)
Answer to Frame Number 42: Any example in which a business or a person owes a person money.

Frame Number: 43

When some businesses go bankrupt, the owners of the business must pay off their debts with their personal assets. However, this is only true if the business is a partnership or an individual ownership. If a corporation goes bankrupt and cannot pay its debts, no one must pay the debts.

If Waco Corporation went out of business and could not pay its debts, who would have to pay the debts?

(your answer)

Answer to Frame Number 93: dividends

Frame Number: 94

One difference between preferred and common stock is that you will almost always collect a dividend with preferred stock. However, you do not collect dividends as often with common stock.


Who will always get a dividend?

(your answer)

Answer to Frame Number 144: 5 business days

Frame Number: 145

When you call your stockbroker to sell stock, you are placing a ________ order.

(your answer)
Frame Number: 44

The owners of corporations (the common stockholders) do not have to pay the debts of the company with their personal assets. 

**No one** must pay the debts of a corporation, after the company assets are gone.

If Tastee Freeze Corporation went bankrupt, who would have to pay off the debts with their personal assets? Why?

(your answer)

Answer to Frame Number 94: Wendy

Frame Number: 95

___________________________ generally collect dividends and they also collect the largest dividends.

(fill in the blanks)

Answer to Frame Number 145: Sell

Frame Number: 146

An order to buy stock is called a ______ _______.

(fill in the blanks)
Answer to Frame Number 44: No one. If a corporation goes bankrupt and cannot pay its debts, no one is legally responsible for the debts.

Frame Number: 45

If Tom's Lawn Cutting business went bankrupt, who would have to pay off the debts with their personal assets?

(your answer)

Answer to Frame Number 95: Preferred stockholders

Frame Number: 96

As mentioned before, an important difference between preferred and common stock is: Preferred stock dividends are usually bigger. That is, you get more money in dividends with preferred stock.

Larry owns preferred stock from Weldatron Corporation.
Jim owns common stock from Weldatron Corporation.

Who will probably get higher dividends?

(your answer)

Answer to Frame Number 146: Buy order.

Frame Number: 147

You are now done with Part I. Give this booklet to your instructor and ask for the post test. Good luck on Part II!
Answer to Frame Number 45: Tom - because his company is an individual ownership

Frame Number: 46

If Harry and Baldy's Barber Shop went out of business, who would have to pay off the debts with personal assets?

(your answer)

Answer to Frame Number 96: Larry

Frame Number: 97

__________ holders generally collect the largest dividends.

__________ holders generally collect dividends more often.

__________ holders are the owners of corporations.

(fill in the blanks)
Answer to Frame Number 46: Harry and Baldy - because their company is a partnership.

Frame Number: 47

What type of business owners do not have to use his/her personal assets to pay off his/her debts.

(Your answer)

Answer to Frame Number 97: preferred stockholders
preferred stockholders
common stockholders

Frame Number: 98

What is wrong with this statement: Bondholders generally collect the largest dividends.

(Your answer)
Answer to Frame Number 47: Stockholders - or - owners or corporations

Frame Number: 48

Chapter 3

Now we have learned that when a company goes bankrupt, it must sell all of its company assets to pay off its debts. This is true for corporations, partnerships, and individual ownerships.

GO ON TO THE NEXT FRAME

Answer to Frame Number 98: Preferred stockholders generally get higher dividends. Bondholders get interest - not dividends.

Frame Number: 99

What kind of stock usually pays dividends more often?

(your answer)
Frame Number: 49

However, when all of the company assets are gone and there are still debts to pay, where does the money come from? With a partnership or an individual ownership, the owners must pay the debts with their own personal assets (after company assets have been spent). However, with a corporation no one has to pay its debts when it runs out of money. Also corporations are owned by the common stockholders. What do stockholders get to represent their ownership?

(your answer)

Answer to Frame Number 99: Preferred

Frame Number: 100

Before, when we were talking about bonds, we said that if a corporation went bankrupt, the ____ holders would get paid off first.

(your answer)
Now you will read about something different. We will talk about ways that a company can raise money to buy more materials and land. You will see how ownership of a corporation can be sold. For now, try this review question. A person owns a business if he ______ or ______ something for money.

(fill in the blanks)

If there is any money left after the bondholders are paid off, the p________ stockholders are paid off next.

(your answer)
Answer to Frame Number 50: Sells or does

__________

Frame Number: 51

Greg's Guitar Corporation made and sold guitars. At its fastest, the corporation could make 10 guitars every week. But there were always 100 people every week who wanted to buy these guitars. So a lot of people had to go to other stores to buy their guitars.

If Greg's Guitar Corporation could make more guitars, they could make more m ______.

(your answer)

__________

Answer to Frame Number 101: Preferred

__________

Frame Number: 102

If American Motors went bankrupt and they had to sell all of their assets, who would get their money second?
Who would get their money first?

(your answers)