

CHAPTER I

DESCRIPTION OF THE STUDY

“Without question the single most potent tool I have come across in my more than half-century of experience with adult education is contract learning” (Knowles, 1990, p.127).

Although Malcolm Knowles focused on adult learners in institutions of higher learning, the use of learning contracts has now spread to primary and secondary schools, to vocational training, and to staff development in many institutions (Anderson, Boud, & Sampson, 1996).

Background

A former teacher at an intermediate school in southwest Virginia first introduced a learning contract to me when I assumed the teaching responsibility for 110 seventh-grade life science students on January 13, 1997. During my interview, the principal explained that a learning contract had been used with the seventh-grade life science students for over 18 years, and he considered it a successful teaching strategy, especially with mixed-ability students. As I drove home from the interview, his words, “It works,” kept repeating over and over in my mind.

Because I was hired in the middle of the academic year, it made sense to continue with a learning contract. With classroom routines already established, the students eagerly taught me how the learning contract applied to the class on a daily basis. As a result, I had the time to adapt to my new teaching position and to this new strategy for instruction.

As the new teacher, I wanted to make a smooth transition between the teaching style of the previous teacher and myself. The learning contract used by the students planned for the life science concepts to be taught along with supporting activities and resources. As a document, the learning contract provided a quick overview of past, present, and future topics. As a teacher’s tool, the learning contract helped to plan for instruction by mapping the life-science curriculum for the students.

During the remaining 18 weeks of the school term, I developed three new learning contracts, one for each grading period of six-weeks. At the end of the school year, I decided to conduct a case study with my seventh-grade life science students for the 1997-98 school term to explore the implementation of a learning contract and to discover how it affected the students’ learning experiences.

In this chapter, I discuss the purposes of my case study, the origins and definitions of types of learning contracts, the research questions, and the methodology used to conduct my research.

Purposes of the Case Study

I had two purposes for conducting my case study: (a) to describe how learning contracts were implemented in a seventh-grade life science class during the 1997-98 school term, and (b) to discover how the learning contract affected the students' learning experience. Ideally, the data gathered from the case study would benefit teachers and administrators who want to infuse variety into instructional methods, who work among students with diverse needs, and who want to motivate students to actively participate in their learning experiences.

Origins of Learning Contracts and Contract Grading

Industry, health fields, and all levels of education have used learning contracts for many years. They can be traced back to 1915, when they consisted of units or work projects that involved reading, exercises, and written assignments to be completed in a specific time, usually three to four weeks (Dunn & Dunn, 1972).

Contract grading has its origins in the Dalton laboratory plan of education. In 1920, Miss Helen Parkhurst, working with Dalton High School in Massachusetts, developed a plan whereby students were given a list of monthly assignments for each course. Once the students completed the assignments satisfactorily, they moved on to the next area (Dewey, 1922).

Definitions of the Types of Learning Contracts

A learning contract. It serves as a tool and a strategy for the teacher and the student in a learning environment. Developed as a way to individualize instruction for multi-aged and mixed-ability students, the learning contract allows the users to participate in a variety of learning opportunities. The learning contract can be described as a written agreement between the teacher and the student. It identifies the learning activities for a grading period and allows the students to differentiate their assignments according to the menu of available activities (Dunn & Dunn, 1975). Dunn and Dunn (1975) defined a learning contract as a “self-contained outline of study that indicates to the student behavioral objectives, resource alternatives, activity alternatives, and reporting alternatives” (p. 32).

Contract learning. This type of contract offers an alternative way of structuring a learning experience (Knowles, 1986). It exists as a written agreement between the teacher and the student that specifies a learning plan for that individual. “It solves the problem of getting the learner to have a sense of ownership of the objectives he or she will pursue” (Knowles, et. al., 1998, p. 139). It identifies a variety of resources for mixed ability learners to learn the same thing. Contract learning allows the learner to visualize the structure for planning for learning, and it involves the learner in evaluating the learning outcomes (Knowles, et. al., 1998).

The self-evaluation strand in the Knowles’ model of contract learning differentiates this type of contract from the Dunn and Dunn model.

Contract grading. An alternative to standardized tests, this type of grading system specifies that the teacher and the student agree at the beginning of a unit: (a) on particular course objectives to be completed by the student, (b) on the support to be provided by the teacher, and (c) on how the results are evaluated. The contract provides documentation of student achievement in relation to specified objectives. Upon completion of the contract, the teacher and student cooperatively evaluate the work, choose new assignments, and seek to clarify past or newly stated objectives (Wildemuth, 1984).

Contract Activity Package (CAP). When a learning contract includes a means of diagnosing “what the student already knows about a given topic or concept and what he still must learn, it is called a ‘contract activity package’ (CAP)” (Dunn & Dunn, 1975, p. 33). This type of learning contract is a modified version of the one defined earlier by Dunn and Dunn in 1975. The additional parts in the CAP include a diagnostic test, a self-assessment inventory, and a teacher assessment of the student (Dunn & Dunn, 1975).

These four models offer an alternative method of engaging the students in their assignments. Learning how to learn is a major goal of any educational process (Anderson, Boud, & Sampson, 1996). Learning contracts, contract learning, contract grading, and CAP share the same basic principle of connecting a learning experience to an individual learner. “The basic criterion for a good contract is how well the learning experience has met the needs of the person concerned, not how well it compares to what others are doing” (Anderson, Boud, & Sampson, 1996, p. 118). Wildemuth (1984) cautions that a contract should be used as a process for learning, and not as an instrument to get the job done.

I modeled the learning contract for my case study using the Dunn and Dunn specifications listed in 1975 but excluded the additional parts defined in the CAP. It contained the curriculum objectives, a description of the learning activities, alternative activities, and reporting alternatives. This model met the educational needs of the seventh-grade life science students because it fostered individualized instruction so essential to the mixed-ability learners.

Research Questions

I developed 24 questions to describe the implementation process for a learning contract and the effects on the students' learning experiences. I clustered these questions by reporting group: (a) the seventh-grade life science students, (b) their parents, and (c) the teacher-researcher and the resource teachers.

I divided the research questions for the students into two major categories: questions 1 through 7 inquired about the students' learning experiences, and questions 8 through 13 inquired about the implementation of a learning contract. A breakdown of the questions follows.

Questions for students about their learning experiences:

1. Do learning contracts help students to be better learners?
2. Do learning contracts keep students organized and focused?
3. What choices do students make with respect to contracted grades?
4. Do learning contracts improve student achievement?
5. Do learning contracts affect students' feelings about their grades?
6. How do learning contracts affect students with different abilities?
7. How does a learning contract affect students' feelings about learning, self, school, and course content?

Questions for students about the implementation process:

8. What skills and abilities do students need to work with learning contracts?
9. How do student teams work with a learning contract?
10. How do individual students work with a learning contract?
11. What grades do students contract for and why?
12. Do students earn the grades for which they contracted?
13. Are contracts preferred by some students and not by others?

I designed the research questions for the parents to discover their attitudes regarding a learning contract and how they used or did not use it to monitor their children's progress.

Questions for parents:

14. Do parents use a learning contract to monitor their children's progress?
15. How supportive are parents of their children's learning contract?
16. Are parents aware of the grades for which their children contract?

The research questions for the resource teachers and me examined the responsibilities of using a learning contract with respect to planning, roles, assignments, attitudes, and time-intensity.

Questions for the teacher-researcher and the resource teachers:

17. How does a learning contract affect the teachers' planning?
18. How does a learning contract affect the teachers' role in the classroom?
19. What changes or modifications were made to a learning contract during a grading period with respect to assignments and points?
20. How does student input regarding a learning contract affect the classroom teacher's attitude towards a learning contract?
21. How time-intensive is the grading component of a learning contract?
22. How do resource teachers use a learning contract with students with learning differences?
23. How do the teachers help students keep up with assignments using a learning contract?
24. As a result of this study, will the teacher-researcher continue to use a learning contract?

Methodology

After the development of the research questions, I next determined a working definition of a case study and designed a plan for collecting data. The next section identifies the three groups of participants and their special contributions to the research plan. It also presents the instruments used to collect quantitative and qualitative data.

Case Study Defined

According to Schramm (as quoted by Yin, 1994), "The essence of a case study, the central tendency among all types of case study, is that it tries to illuminate a decision or set of decisions: why they were taken, how they were implemented, and with what results" (p.12).

The decisions to implement a learning contract and to describe the effects on the learning experiences of the students fit Schramm's definition. As the classroom teacher, the school allowed me to choose the methods and strategies for teaching the life science curriculum. I wanted to know if my decision to implement and to use the learning contract would be a rewarding experience for my students and me.

Case Study Participants

I clustered the case study participants into three groups: (a) the seventh-grade life science students, (b) their parents, and (c) the teacher-researcher and the resource teachers. A total of 137 seventh-grade students, divided into five classes, participated in the case study (see Table 1). I grouped each class by the period that they were assigned life science. The periods were zero, first, second, fourth, and fifth. Table 1 shows the students' distribution by period, time of day, class size (N), gender, ethnicity, and the number of students with special-needs or learning differences.

The class size remained approximately the same across the five periods. Gender differences existed between zero and fifth periods, while the other three periods were consistent. Caucasians made up the majority of the classes more than any other ethnic group. First period had the greatest number of special-needs students.

The parents of the seventh-grade life science students proved instrumental in providing information about a learning contract. Many of the parents had a college education, were middle-class citizens, and had lived in the neighborhood for most of their children's school years. They actively participated in the Parent-Teacher-Student Association, and many visited the school on a regular basis to monitor the academic progress of their children.

The remaining group involved in the case study consisted of three resource teachers and the teacher-researcher. I identified the resource teachers as teachers who worked with the special-needs students, either during the life science class time, or during a designated time in another resource area or classroom. Two of the resource teachers worked individually with special-needs students in their respective classrooms, while the school assigned the third resource teacher to the first-period life science class.

The two resource teachers who worked with the special needs students during designated times had years of experience with learning disabled students. Both had worked with a learning contract prior to the 1997 school term and were familiar with its structure and purposes.

The third resource teacher, assigned to the first-period class on a daily basis, was a first year teacher and new to the school. She had never worked with a learning contract and prior to this teaching assignment had no experience with middle school students and the life science curriculum.

The teacher-researcher or classroom teacher coordinated the learning activities for the special-needs students in the classroom and with the resource teachers. Communication among the teachers was paramount in order to help the students complete assignments and receive extra help.

As the teacher-researcher, my background helped me to adjust to my new teaching position. My teaching career began in 1970 in adult education, and in 1977, I started teaching middle school students. Over the next 20 years, my emphasis shifted to the high school arena, teaching in all areas of science. Because of my husband's active-duty military status, moving every 3 years became a routine. Consequently, I worked in 10 different school systems. Each teaching assignment proved to be challenging and rewarding, while providing a wealth of valuable experience with science curriculum and teaching strategies.

My prior experience with a type of learning contract occurred in 1991 in a high school setting with junior and senior year chemistry students. The Exam Review Contract consisted of a one-page list of review assignments for each day of the final exam review. The students' objectives included self-pacing themselves and mastering one review activity before going to the next one. The students had the opportunity to work in cooperative learning groups or individually. As the students completed the activity, they would show it to the teacher for correctness and then receive a predetermined number of points on the "contract." The total points earned with the Exam Review Contract were averaged into the students' final grade.

Table 1**Class Periods, Time of Day, Class Size (N), Gender, Ethnicity, and the Number of Students with Special Needs for Seventh-Grade Life Science Classes, 1997-98 School Term**

Period	Time	<u>N</u>	Boys	Girls	White	African-American	Other	Special-Needs
Zero	7:40- 8:33	28	9	19	26	1	1	0
First	8:38- 9:29	29	16	13	21	7	1	7
Second	9:34-10:25	27	13	14	25	2	0	3
Fourth	11:26-12:15	27	13	14	23	3	1	3
Fifth	12:48-1:39	26	16	10	21	3	2	3
Totals		137	67	70	116	16	5	16

Note. Special-needs students includes those students with identified learning disabilities (LD), emotional disabilities (ED), other health impaired (OHI), and those students taking prescription medications for Attention Deficit Disorder (ADD), Attention Deficit Hyperactive Disorder (ADHD), or hyperactivity. Other ethnicity groups include Hispanic, Asian or Pacific Islander, American Indian or Alaskan Native, and unknown.

This contract had many advantages. The Exam Review Contract enabled the teacher to facilitate the learning activities, and it enabled the students to take responsibility for preparing for the final exam. In reflecting on this experience, I remembered that the students had high productivity, stayed on task, and seemed better prepared for their final exam. I kept the other successful contract in mind as I moved onto new schools.

My educational experience spans 30 years, encompasses fifth-grade students through adult learners, and has been in a variety of geographic locations. Although my Virginia Postgraduate Professional License lists biology as an area of endorsement, prior to 1997 I had never taught biology. In the middle school curriculum, biology is listed as life science to differentiate it from the high school biology course. The last position I held where I taught seventh-grade students occurred in 1977. Needless to say, I gratefully appreciated beginning my new teaching position using a learning contract already in place at the intermediate school. It proved to be an invaluable source of data for my case study.

Data Collection

The data for my case study consisted of the daily occurrences in the life science classroom. All of the participants, teacher-researcher, students, and parents had key roles in data collection.

My responsibilities, as the teacher-researcher, included keeping a grade book, a research journal, and interviewing the students. One of my Virginia Tech professors interviewed me.

The seventh-grade life science students contributed information from four sources: (a) a learning contract, (b) a Final Grade Summary Sheet, (c) a student survey, and (d) interviews by the teacher-researcher.

The parents volunteered data on the Parent Survey and on the Learning Contract Letter. The data from each group were used to answer the 24 research questions. The data sources are discussed in the following sections.

Teacher's Grade Book

The teacher's grade book recorded the students' learning contract grades and their earned grades for three grading periods. I entered the learning contract grade after the students had taken the Learning Contract Letter home to be signed and reviewed by their parents. This information compared contracted grades with earned grades for each grading period. Upon the return of each

signed learning contract, I drew a circle around the learning contract grade in my grade book. Parents' signatures on learning contracts served as an indicator of parents' monitoring their children's contracted grades.

Teacher's Research Journal

The teacher's research journal daily recorded the events that occurred in the seventh-grade life science classroom. I, as the teacher-researcher, described the plans for the learning activities, recorded my impressions and the students' comments, and evaluated progress. I made entries in the research journal during my planning period. If the school had an early closing due to inclement weather or a faculty meeting, I simply recorded the previous day's events the next day. I kept the researcher's journal on the classroom computer using the Claris Works application for three grading periods. The teacher's research journal can be found in Appendix A.

Teacher-Researcher's Interview by My Professor

Interview questions were developed about the implementation process and the learning experiences of the students using a learning contract. I developed the interview questions and the School Leaders' Cohort later previewed them. The latter consisted of a group of doctoral students enrolled in the School Leader's Program with the same defense committee advisor who made recommendations for revisions.

Information from the interview was used to define the learning contract as an instructional strategy and as a means of explaining the learning activities in the life science classroom. My Professor, who conducted the interview with me, modified these questions during the interview. The interview questions for the teacher-researcher can be found in Appendix B. The teacher-researcher's interview transcript can be found in Appendix G.

Students' Learning Contract

Each grading period began with a new learning contract that listed letter grade requirements and information about the learning activities for six-weeks. The learning contract was to be read and discussed by students and parents, signed by both, and returned to me, the teacher-researcher. This learning contract included the letter grade that the student contracted to earn for the grading period. I recorded the contracted grade in my grade book and then returned

the learning contract to the student. The letter grade information was used to determine if the students earned the grade for which they contracted.

Chapter 3 discusses the learning contract in greater detail. It contains a sample learning contract.

Students' Final Grade Summary Sheet

The students completed this form at the end of each grading period by adding together the total points from a Student Progress Sheet for both learning activities, required and additional. The students calculated their final, unofficial earned grade based on the total number of points earned. This information gave the students an opportunity to evaluate their performance and to compare their contracted grade with their earned grade. A Student Progress Sheet makes up one component of a learning contract. Later, in Chapter 3 it is discussed and exhibited.

Two questions were listed at the bottom of a Final Grade Summary Sheet. The first question asked the students if they earned the grade they contracted for and generated discussion of what strategies they used to earn their grades. The second question asked students to reflect and then to write down ways for self-improvement for the next grading period. I then collected the Final Grade Summary Sheet. The students' comments answered the research questions regarding students' feelings about grades, self, school and course content. A Final Grade Summary Sheet can be found in Appendix C.

Students' Survey

At the end of the school year in June 1998, I administered the student survey. The questions used a Likert scale for analysis. Each of the five classes reported individually, and then the data were averaged for the entire seventh-grade group. The student survey used a total of 15 questions. Students also had an opportunity to write a short story about their learning experiences at the end of the student survey.

I derived the student survey questions from the research questions. My School Leaders' Cohort previewed them, and later I revised them based on their recommendations. Originally, the student survey was to be administered after the completion of the third grading period in January 1998. However, due to inclement weather and other unforeseen events, the student survey could not be given until June 1998. A copy of a student survey can be found in Appendix D.

Interviews with Past and Present Seventh-Grade Students

I developed interview questions for both past (1996-97) and present (1997-98) students to record their opinions about a learning contract. I interviewed a total of 4 students, 2 from the eighth-grade and 2 from the seventh-grade. The interview questions for the students were developed from the 24 research questions. Input from my School Leaders' Cohort proved useful in my evaluating and revising the questions.

I conducted the interviews on a volunteer basis after school in May of 1998. They lasted approximately 10 to 20 minutes. I conducted the interviews in the life science classroom over a period of two weeks.

Although I originally interviewed 4 students, only 2 students' tapes survived a summer move with a box of candles. The interview questions for the students can be found in Appendix E, and the 2 students' interview transcripts appear in Appendix H.

Parents' Survey

On November 3, 1997, the Parent-Teacher Conference gave me an opportunity to survey parents' feelings about a learning contract. A total of 48 parents completed the Parents' Survey before talking with the teacher-researcher. The questions for the Parents' Survey were developed from the research questions, and they tried to find out the involvement of the parents with their children's learning contract. A parent survey makes up Appendix F.

Learning Contract Letter for Parents' Signature

The signed and returned learning contract letter indicated that the parents' involvement with the students' learning contract commitment for a new grading period. This form made up the first page of the three-part learning contract, in which Chapter 3 discusses and exhibits.

Data Analysis

The 24 research questions formed the basis for data collections and analyses. Table 2 summarized the research questions, data collection items, and the methods used for the breakdown of data for analyses.

Table 2**Research Questions, Data Collection, and Data Analysis for Students, Parents, and Teachers**

Students' research questions	Data collection	Data analysis
1. Do learning contracts help students to be better learners?	Student survey, Q. 2, 5, 11 Final grade summary sheets Interviews with students and teacher-researcher	Spreadsheet Raw data matrices
2. Do learning contracts keep students organized and focused?	Student survey, Q. 1, 3, 4 Researcher's journal	Spreadsheet Raw data matrices
3. What choices do students make with 4. respect to contracted grades?	Student survey, Q. 14 Teachers' grade book	Spreadsheet Raw data matrices
4. Do learning contracts improve student achievement?	Student survey, Q. 5 Teacher's grade book	Spreadsheet
5. Do learning contracts affect student's feelings about grades?	Student survey, Q. 7 Students' interviews	Spreadsheet Raw data matrices

(table continues)

Table 2**Research Questions, Data Collection, and Data Analysis for Students, Parents, and Teachers**

Students' research questions	Data collection	Data analysis
6. How do learning contracts affect students with different abilities?	Final grade summary sheet Teacher's grade book Student survey Q. 10	Raw data matrices Spreadsheet
7. How does the learning contract affect students' feelings about learning, self, school, and content?	Student survey, Q. 7, 8, 9 Students' interviews Researcher's journal	Spreadsheet Raw data matrices
8. What skills and abilities do students need to work with learning contracts?	Student survey, Q. 10, 11	Spreadsheet
9. How do teams work on learning contracts?	Student survey, Q. 12 Researcher's journal	Spreadsheet Raw data matrices
10. How do individuals work on learning contracts?	Student survey, Q. 13 Students' interviews	Spreadsheet Raw data matrices
11. Do students earn the grade for which they contract?	Teacher's grade book Final grade summary sheet	Graph Spreadsheet Raw data matrices
12. What grades do students contract for and why?	Teacher's grade book Student survey, Q. 14 Students' interviews	Spreadsheet Raw data matrices

(table continues)

Table 2**Research Questions, Data Collection, and Data Analysis for Students, Parents, and Teachers**

Students' research questions	Data collection	Data analysis
13. Are learning contracts preferred by some students but not others?	Student survey, Q. 15 Student interviews Final grade summary sheet	Spreadsheet Raw data matrices
Parents' research questions	Data collection	Data analysis
14. Do parents check on their child's progress?	Parents' survey Q. 1, 2, and 5	Spreadsheet
15. How supportive are parents of their child's work on the learning contract?	Parents' survey Q. 3, 6	Spreadsheet
16. Are parents aware of the grade for which their child contracted?	Parent's survey Q. 1, 2	Spreadsheet
Teachers' research questions	Data collection	Data analysis
17. How do learning contracts affect teacher planning?	Teacher-researcher interview by her Professor	Summarized points from interview
18. How do contracts affect the teacher's role in the classroom?	Teacher-researcher interview by her Professor	Summarized points from interview

(table continues)

Table 2**Research Questions, Data Collection, and Data Analysis for Students, Parents, and Teachers**

Teachers' research questions	Data collection	Data analysis
19. What changes were made to the contract during the contract period with respect to modifications, additions, and points?	Researcher's journal	Summarized points from researcher's journal
20. How has student input regarding the learning contract affected the teacher's attitude towards the learning contract?	Students' survey Q. 1-15 Researcher's journal Final grade summary sheet	Spreadsheet Raw data matrices
21. How time intensive is the grading component of the learning contract?	Teacher-researcher interview by her Professor Researcher's journal	Summarized points from interview Summarized points from researcher's journal
22. How do the resource teachers use the learning contract with students with learning differences?	Researcher's journal	Summarized points
23. How does the teacher help students keep up with assignments and due dates with the contract?	Researcher's journal	Summarized points
24. As a result of this case study, will the teacher-researcher continue to use the learning contract?	Researcher's journal Student survey, Q.15 Teacher interview by her Professor Students' interviews Final grade summary sheet	Raw data matrices Summary of issues