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A mixed-methods research study comparing observations during integrated curriculum lessons with traditional single-subject lessons for primary-age students

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A mixed-methods research study comparing observations during integrated curriculum lessons with traditional single-subject lessons for primary-age students

Abstract

This study examined teacher talk and actions under two conditions: (1) subject-integrated lessons of an integrated curriculum unit on African culture (experimental condition); and (2) single subject-focused lessons of a traditional separate subject curriculum on mathematics time and money measurement (control condition). The study sought to define and compare characteristics of both curriculum approaches. Although the study was primarily qualitative with observations being recorded by the researcher that were subsequently sorted into categories through a constant comparison method, counts of frequency of observations in categories were recorded, resulting in a mixed-methods design.

The observations were collected in two stages. In stage 1, preservice teachers instructed first and second graders in making authentic papier-mache masks during an integrated African unit. In stage 2, two teachers conducted the mathematics lessons in the same classroom at the same school. Fourteen hours of observations were collected in each phase. In the integrated curriculum setting, the teacher was a facilitator of teamwork, offering choices, and giving praise; students made choices, decisions, and worked collaboratively. In the traditional setting, the teacher role delivered direct instruction and controlled behavior; students followed directions, recalled knowledge, and worked individually. Less teacher energy was expended for behavior management in the integrated curriculum setting, indicating intrinsic motivation of students. Implementation of integrated curricula is recommended because of the student-centered focus that results in greater motivation, ownership, and teamwork, along with deeper knowledge connections. Because many factors hinder implementation, teachers need support when first teaching with this approach.

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This Study by: Ksenia Sergeevna Zhanova

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A MIXED-METHODS RESEARCH STUDY COMPARING OBSERVATIONS
DURING INTEGRATED CURRICULUM LESSONS WITH TRADITIONAL
SINGLE-SUBJECT LESSONS FOR PRIMARY-AGE STUDENTS

An Abstract of a Thesis
Submitted
In Fulfillment
Of the Requirement for the Degree
Master of Arts in Education

Ksenia Sergeevna Zhanova

University of Northern Iowa

July 2010

ABSTRACT

This study examined teacher talk and actions under two conditions: (1) subject-integrated lessons of an integrated curriculum unit on African culture (experimental condition); and (2) single subject-focused lessons of a traditional separate subject curriculum on mathematics time and money measurement (control condition). The study sought to define and compare characteristics of both curriculum approaches. Although the study was primarily qualitative with observations being recorded by the researcher that were subsequently sorted into categories through a constant comparison method, counts of frequency of observations in categories were recorded, resulting in a mixed-methods design. The observations were collected in two stages. In stage 1, preservice teachers instructed first and second graders in making authentic papier-mâché masks during an integrated African unit. In stage 2, two teachers conducted the mathematics lessons in the same classroom at the same school. Fourteen hours of observations were collected in each phase. In the integrated curriculum setting, the teacher was a facilitator of teamwork, offering choices, and giving praise; students made choices, decisions, and worked collaboratively. In the traditional setting, the teacher role delivered direct instruction and controlled behavior; students followed directions, recalled knowledge, and worked individually. Less teacher energy was expended for behavior management in the integrated curriculum setting, indicating intrinsic motivation of students. Implementation of integrated curricula is recommended because of the student-centered focus that results in greater motivation, ownership, and teamwork, along with deeper knowledge connections. Because many factors hinder implementation, teachers need support when first teaching with this approach.

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CHAPTER 1

INTRODUCTION

Background and Personal Narrative

I will begin this paper by providing an overview of my background as a researcher. This paper is focused on integrated and separate subject curricula. As such, my experience in a traditional separate subject curriculum in Russia will provide the context for an exploration of the two approaches to curriculum – integrated and separate subject. In the material that follows, I will present background information about my experience in the Russian educational system.

The schools I was studying in when I was an elementary and secondary student offered a traditional curriculum setting as is the case for the majority of the schools in Russia. At that time, I was already thinking about becoming a teacher and tried to observe my teachers, notice what they teach, why they teach and how they teach. I agreed with some methods and techniques, but did not agree with others. I understood why I was studying certain subjects and why I needed to learn certain types of information. However, I could not even imagine that education might be different from what I was used to. When studying in Herzen State Pedagogical University, I was exposed to only one type of the curriculum – the traditional one. However, I read several articles about education in other countries, and my minor there was TESOL (Teaching English to Speakers of Other Languages), so I knew that the education system in the United States and the curriculum, in particular, was different from what we have in Russia. At home, I was teaching in an elementary school, and used to working in traditional curriculum setting. I knew how a traditional curriculum functioned and how to use its structure to help students achieve the best

possible results. At the same time, it was very interesting to see how different the curricula of schools in the USA were from Russian schools. However, I could not even imagine the difference between the two education systems. Then I received an opportunity to study in the United States and see the way students are taught in American schools. At first it was a shock for me. Everything seemed so unusual. The way students were exposed to information, concepts and facts; the constant integration of each subject into others; the hands-on approach; the real-world problem solving approach: all that was so new for me. When I first found myself in an integrated curriculum classroom, I thought “How does it work?” When I was studying at the University of Northern Iowa, many people I was studying with were from other countries, not only from the United States. They often asked me to tell them about Russian schools, lessons, students, and teachers. My friends at home also asked a lot about schools in the United States. I understood that it was not only me who was interested in comparing schools, curricula, and teaching approaches of these countries.

I have had an opportunity to observe two different curricula which have their own advantages and disadvantages, peculiarities and similarities. In Russia we have a traditional curriculum, although we are moving towards an integrated curriculum. I decided not to limit my comparisons to merely sharing my impressions with other people I know, but to determine the differences and similarities between these two approaches to teaching and to conduct a publishable research study. These are my personal motives for conducting this research.

Separate Subject Teaching in a Russian Primary School

When I was an elementary teacher in Russia, I was teaching in school # 32. This school is situated in the center of Saint Petersburg. This is a typical public school;

students do not pay to attend it. Students are assigned to attend this school if they live in the school district or if parents express the desire for their children to attend that particular school. The school has two buildings. The first one is the elementary school and the second one is the middle and high school. This helps create a more home-like atmosphere in elementary school because the age range is limited to fifth grade. There are about four or five classes of each grade in the school and about 20-25 students in a class. Every class has a teacher who teaches students almost all the subjects, except for music, physical education, and computer science. Teachers stay with the same class of students year after year, being a first grade teacher one year, then a second grade teacher, a third grade teacher, and so on until the end of fifth grade. This is similar to the process of “looping” used in the United States. Each class has its own classroom that is kept for year to year. Students usually are paired and share one table, although in my classroom each student had his/her own table. Students in my school had to wear school uniforms. The uniform was a dark green jacket and black skirt or trousers.

Every day, parents brought their children to school. Students walked in and were admitted by the security officer. This is done to protect the school from social predators or unauthorized persons. The school day started at 9:00 am and finished at 2:40 pm. Each lesson lasted for 45 minutes. There were usually five or six lessons a day with small breaks between lessons of 5-10 minute duration. During these breaks, student may use the restroom, chat, enter a playroom, or prepare materials. There is one big 20-minute break which occurs in the middle of the school day. Usually this long break is used for lunch.

Every lesson in every class started and finished at the same time. School clocks were equipped with bells that were set to indicate when the lesson should be started or finished. I had 22 students in my class: nine boys and thirteen girls. They all were eight or nine years of age. About half of the students were from low-income families. All students had free lunches at school.

The classrooms in elementary schools were usually not very large. Each contained a small space for relaxing. There was a carpet there, a small table, and a shelf with books and toys. Normally, we do not use this space during lessons. Students were allowed to be there only during breaks, recess, and lunch time. There was a cabinet in another part of the room where students' portfolios and items for hands-on lessons that employ craft materials are stored. There were different educational posters on the walls that contained information frequently studied by students such as multiplication facts and grammar rules. There was a teachers' desk where the teacher kept his\her belongings, textbooks, and lesson materials. There were flowers in pots in the classroom. Flowers were used as specimens in science lessons and for helping students learn to be responsible in watering and fertilizing them. There was a blackboard in the classroom, which was used for chalk writing; also it was used to display student's drawings, photos, and work.

Each evening, the teacher prepared for the next day. He\she composed lesson plans for each lesson, prepared materials that he\she would distribute to students, and found the necessary books and texts. Schools assigned teachers the curriculum they should use. In Russia, we have about ten official curricula called "programs." Sometimes, teachers are allowed to choose a curriculum themselves. I had a curriculum named "Elementary school of the 21st century." It included

textbooks, corresponding exercise books (workbooks) with activities on every subject, and a teacher's manual.

The teacher had an official grade book for recording student performance in each subject. Each student has a pupils' planner called a "school record book" where he\she recorded the schedule each week, including dates of assignments and homework. After each lesson, the teacher gathered the pupils' planners and entered grades with the teacher's signature. If a student misbehaved, the teacher wrote a note about that to his\her parents in the pupil's book. Each week, teachers checked that parents had reviewed the book and had signed it. The pupil's school record books were also official documents.

The schedule of lessons was invariable during the year. The school day usually started with a greeting. All the students stood near their tables as this was the formal position for greeting the teacher. The teacher said, "Hello." Then the teacher briefly described the activities students will do during the lesson. In elementary school, teachers usually tried to shape a lesson as a game which covered the educational goals and made them more appealing to students. Students thought that they were playing, when in fact they were studying. All tasks and activities were interconnected. For example, students might be presented with a poster of a soccer field and as students completed tasks, the soccer teams moved across the field and scored goals. Alternatively, students might see a map of a treasure island and complete school tasks to move around the map in search of treasure.

Before each activity, the teacher explained why the activity was useful and how could it help students. This was one of the ways of implementing an interactive approach. During the lessons teachers alternated reading tasks, writing tasks, and

discussion tasks. It is difficult for students to stay on task for a long time, therefore if a variety of tasks are presented, it is easier for them to continue working. In the middle of the lesson we usually have a three minute break. The teacher organized a small game or stretching activity for students. This break helps students relax a little bit and the physical activity promotes circulation. This small break is very important because students have to sit at their seats for a long time.

The teacher may organize a group activity or an individual activity or ask a student to come up to the blackboard and demonstrate how to complete the task. Usually all students completed the same assignment or activity, although teachers knew their students well and prepared individual tasks for high and low achievers in advance. A small part of a teacher's lesson was devoted to assigning the students homework. Another small part of a lesson was spent on checking the homework that was done by students the previous day. The teacher asked a randomly-chosen student to announce the answers or read the text. Other students volunteered to read their assignment response. The purpose of this is to make sure everyone understood how to finish that homework correctly or just to share the information with others. If any questions emerged the teacher helped solve them.

As I've already mentioned, elementary school students usually had a minimum of four and a maximum of six lessons a day. Some subject-area lessons occurred every day, while other subjects (music, physical education, art, and crafts) occurred once or twice a week. Table 1 shows the schedule my students had when I was teaching the third grade.

Table 1.

Schedule of lessons of the third grade classroom in a traditional primary school.

Time	Monday	Tuesday	Wednesday	Thursday	Friday
9:00–9:45	Russian language	Technology lesson	Mathematics	Science	Literature
10:00–10:45	Science	Mathematics	Music	Literature	Mathematics
11:05–11:50	Mathematics	Art	Computer science	Russian Language	Russian language
12:10–13:55	English language	Literature	Russian language	Physical Education	Art
14:00–14:45	Music	Science	Literature	Mathematics	Early dismissal or after-school club
14:55–15:40	Early dismissal or after-school club	Physical Education	Early dismissal or after-school club	English language	Early dismissal or after-school club

After the lunch break, students have two or three more lessons depending on the schedule. After the school day had finished, some students went home with their parents, while other students attended after school activities; others go to an extended day class, which was a sort of daycare.

The Elementary Curriculum in Russia.

Education in the elementary school is the second stage of education in Russia, occurring as preschool education. The main goal of the elementary curriculum is to have students master basic, general knowledge; develop cognitive abilities and communicational skills; and develop general educational skills. Another goal is to help students take ownership of and enjoy the learning process. The elementary curriculum is also aimed to teach students the basics of theoretical thinking and

develop students' ability to control their behavior. The other goal that the elementary curriculum has is teaching students to be good citizens. Providing students with positive motivation for studying, meeting and developing student's interests, along with teaching them collaboration and the basics of moral behavior is another goal of the elementary school (Federal State Educational Standard, n.d., ¶ 1).

The mandatory part of the curriculum was created to prepare students for studying in middle and high school. This part of the curriculum includes an introduction to computer and other electronic technologies and the basics of a healthy life-style, basic rules of survival under extreme conditions (such as war, radiation exposure, becoming lost in the wilderness). Another required part of the curriculum addresses the basics of fundamental disciplines which are represented by the following school subjects: mathematics, science, reading, writing (also referred as Russian Language or Native Language in parts of Russia where Russian is a second language), physical education, music, technology, foreign language lesson (usually it is English or German, rarely it is French or Spanish), and art.

The additional non-mandatory part of the elementary curriculum includes all the extracurricular activities that a student can chose. These activities may be singing in a choir, participating in school theater or in a poetry club, excursions/field trips, competitions, and research projects. Additionally the non-mandatory part of the curriculum may be devoted to help students with problems in studying.

In Russia there are about ten officially approved curriculum programs. Each school may determine which curriculum program it uses. In several schools, teachers can choose a curriculum program for their individual class. All the programs include an official minimum of facts, concepts and assignments approved by government so

that students will be able to pass exams and enter the next grade. All other information, assignments and concepts may vary.

Rationale and Context of the Research Study

Students are the future of a nation. Taking care of them equates to taking care of the future. Education is an engine of progress, and a good educational system is one of the necessities of this rapidly-changing time. That is why education warrants so much attention. Students spend a significant part of their day at school; a significant part of their life in class (Materinstvo, 2007). School is sometimes called a second home for students; therefore, people are continuously interested in improving educational systems and teaching practices. Conducting research is important because exploring the educational system in a real school setting and comparing various approaches will help discover better ways to improve the school.

The curriculum forms the foundation of any educational system. It includes all the components of education: theory (content to be transmitted), practice (ways of applying the knowledge and skills in educational and real life situations) and product (the actual outcome of education: literacy in the many spheres of life) (Smith, 2000).

The traditional single-subject curriculum and the integrated curriculum are two important and widely-used kinds of curricula. They both have advocates and opponents among educators. According to a review of the professional literature, many researchers have studied curricula, resulting in a great body of research. Because of my traditional curriculum experience in Russian schools, I wanted to study about these two approaches to curriculum more in-depth, comparing and contrasting them. I wanted to see how curricula were developed, which events and ideas influenced their development, and the main goals and concepts of each approach.

I also wanted to examine the roles of teachers and students in each curriculum, documenting the advantages and disadvantages of each and possible ways to improve each of them. One of the means by which I explored these two approaches to curriculum was a review of the literature to find previous work highlighted the components of the integrated and traditional curriculum.

Purpose of the Research Study

The purpose of this study is to compare lessons in two conditions, both occurring at the primary grade level: (1) subject-integrated lessons of an integrated curriculum unit; and (2) single subject-focused lessons of a traditional separate subject curriculum. Specifically this study seeks to answer the following questions:

1. What does implementation of an integrated curriculum unit look like in a primary classroom?
2. What does implementation of a traditional curriculum unit look like in a primary classroom?
3. How are implementation of an integrated curriculum and implementation of a traditional curriculum alike and how are they different?

Significance

To answer the three research questions described previously, this study analyzed each curriculum setting from several points of view: the structure of the lesson, instructional methods, motivational techniques, and questions posed by teachers. These criteria were used as markers to compare the two approaches to curriculum.

Challenges and Limitations

One of the challenges of this study was translation. When I wrote the literature review, I read Russian texts on the history of Russian education. Sometimes it was very difficult or even impossible to find an appropriate English equivalent of a word, phenomenon, or event that existed in Russia but not in the United States.

The other challenge was gathering data in the integrated curriculum setting. Because there was only one observer and there were 23-25 preservice teachers in each class, the observer could watch and gather data about only two groups of preservice teachers (or about 6-7 persons) at a time. To obtain a broad view of interactions taking place in the classroom, the researcher rotated among the groups daily. Data from groups who were not directly observed was not collected.

One of the limitations of the study was the fact that during the observation of the integrated curriculum setting the number of preservice teachers was 23-25 which exceeded the number of students in the class. However, in the traditional curriculum setting, there were two teachers in the classroom. This may have affected the behavior of students, which in turn affected the behaviors of teachers or preservice teachers.

Definition of Terms

Curriculum. Curriculum consists of all the experiences a learner has at school, particularly focused on the content being taught, but includes values and norms that are infused into the curriculum (the hidden curriculum; Jensen & Kiley, 2005).

Integrated Curriculum. Integrated curriculum is a curriculum that connects two or more school disciplines during the educational process (Krogh, 2001).

“Interdisciplinary Teaching,” “Thematic Teaching,” and “Synergistic Teaching” are named as the synonyms of integrated curriculum.

Interdisciplinary Curriculum. A type of integrated curriculum that makes explicit connections among different subject areas through a theme. Content and skills are taught multiple times across the different subject areas (Drake, 2007).

Traditional Single-Subject Curriculum. “Traditional curriculum is a curriculum focused on the transmission of discrete pieces of information--frequently rote facts and formulas--from teacher to student. Because the information is considered important in its own right, traditional curriculum designers often pay little attention to whether or not students use the information in any real-life context. In this kind of curriculum, segregated "silos" of knowledge (labeled "disciplines") are used to impose order on information” (North Central, n.d., ¶ 1).

Inquiry Learning. An instructional approach that holds as a premise that students learn best when solving problems or exploring puzzling situations that intrigue them. This approach includes recognition of a problem, data gathering, development of a theory or hypothesis, analysis, and evaluation (Jensen & Kiley, 2005).

Mixed Methods Study. “Mixed-methods research: research that combines quantitative and qualitative methods” (Slavin, 2007 p. 8 ¶ 5). Both research methods contribute significantly into the study.

CHAPTER 2

LITERATURE REVIEW

Overview

The following main section presents information from the professional literature that defines a traditional curriculum and explains its components and effects on students. Its first subsection applies these ideas to the history of education in Russia, showing how the traditional curriculum developed in that country. Then, traditional primary practices in contemporary Russian schools are explored. In the second main section, an integrated curriculum is explored. Finally, the history of the use of an integrated curriculum in the United States is presented to provide a strong foundation for the study.

Traditional Education with Separate Subject Areas

A traditional education system has its focus on students gaining a theoretical knowledge base more than on students participating in experiential learning. Students are given a lot of information to memorize (Waxler, 2009). They are not often allowed to try proving or disproving a hypothesis or to experiment on their own. They obtain knowledge artificially as opposed to taking the steps that other human investigators took earlier through experimenting and defining new concepts. Knowledge gained by a person on his/her own is more robust and long-lasting (Nagel, 1996).

The social structure of schools that employ a traditional curriculum has a strong hierarchy and is characterized by lack of student choices (Zemelman, 1998). The role of the teacher is to control and evaluate the learning process of students. The role of students is to obey the teacher in the way the teacher specifies; much

memorization occurs. Students are not equal participants in the process of education. They cannot influence the curriculum or the teaching-learning process. (Zemelman, 1998).

In a traditional curriculum classroom, students are told that they have to study; they are also given reasons why they need to study, but they are not given a chance to find their own motivation for studying. The traditional education system promotes a value set that might not include the learning process: the learning itself and self-improvement are not important. The values supported by a traditional curriculum setting are focused on the social and financial benefits of receiving a degree (Zemelman, 1998). That seems logical, because if students are not given any choice and their opinion influences nothing, they are not likely to accept ownership of their studying and take responsibility for learning.

A traditional curriculum implies separate lessons for each subject. Students are grouped into classrooms by age and level of ability. Students complete the majority of assignments on their own. All students usually are assigned the same task to be completed during the same time period. Assignments requiring teamwork are used less often in a traditional curriculum setting (Contemporary Traditional Education, 2010). The textbooks for this kind of curriculum are organized around themes. Each book is devoted to a specific subject and the books used for different subjects usually do not make connections to each other.

Tasks and assignments that students are asked to complete are sometimes based on repetition, memorizing and drill. However, not all assignments are of this type and student learning does occur during these drills.

A lot of information during traditional lessons is given to students directly (direct instruction). However, that does not mean that teachers do not help students develop their higher level thinking skills. Teachers ask so-called “problematic questions,” which require students to think (The Technology of the Problematic Education, n. d). Teachers create these problematic situations in which students have to analyze data or information before making a decision and acting. The statement that the traditional curriculum is not connected to student’s life is not completely true. If one opens a traditional mathematics textbook, one will find problems which describe situations that are close to students’ interests and lives.

Assessment is not always conducted by teachers. Sometimes they ask students to evaluate the group work, or to give their opinion of an essay written by a classmate.

The traditional curriculum offers fewer opportunities for students to communicate and collaborate than the integrated curriculum. However, students are not deprived of group project work and discussion during lessons. Additionally, they sometimes have small breaks between lessons to relax and communicate. The next section addresses the history of education in Russia; this country has a long history of practicing traditional education.

History of Education in Russia

Generally, schools were created in monasteries with monks in the role of teachers; thus early education focused on religion. The subjects that were taught in schools were writing, reading, crafts (such as wood-working or metal working) and religious literacy (Gurkina, 2001, p. 4). This was the first step towards a curriculum. It was a predecessor of the separate subject curriculum. According to historians, books

that were used for teaching were the Bible and other religious texts, which means, different subjects were taught using the same material.

Peter the Great (or Peter the First) reformed not only the government and army, but the education system as well (Gurkina, 2001). He wanted Russia to be one of the greatest empires in the world; therefore he invested in Russian education. He developed educational institutions in Russia so that citizens could learn domestically rather than travel abroad for education (Leontev, 2001).

The main approach to education in schools at that time was a hands-on approach. There were such subjects as literature, Russian language, foreign language and mathematics along with subjects devoted to certain professions. For example, there were specific schools formed such as an artillery school, medical school and engineering school in Saint Petersburg (Gurkina, 2001). Schools and other institutions were single-sex institutions. At that time, there was neither official pedagogy nor curriculum (Leontev, 2001). In 1725, Peter the Great established the Academy of Sciences. It included a university and a school for students. That institution became the heart of the educational system of Russia (Gurkina, 2001).

Education was still a privilege and few people could afford it. By law, in 1786, every town, even those of small size, had to found a school. In the first couple of years, students were taught to read and write with students studying the Bible as a separate subject. After a couple of years in this elementary school, students went to a secondary school with more subjects (geography, physics, mechanics, geometry, history, Russian language). The Russian government assigned a plan of study for students at all schools (Leontev, 2001). Lessons were standardized to address a single subject, while students were organized into classes. The first methods of teaching

were developed and mainly featured exercises that were based on drill (Leontev, 2001). Students had to memorize a lot of information that had nothing to do with their interests. The role of the teacher was not the leader; teachers were governors of a group of students with the power to punish. Students were told what to do and if they performed incorrectly or misbehaved, they received corporal punishment. The life of commoners was not valued. Students were treated as property of parents, unequal to adults. Students in a class were considered the property of the teacher when they attended school. No one cared about students' interests or needs. Students were "stuffed" with knowledge and skills, with one goal – to obtain a job in the future.

In the 1860's, the reforms of Alexander the Second greatly influenced Russia education. At that time, education was paid much attention, being discussed in the press and in special pedagogical magazines. The necessity of educating each and every student without regard to status was becoming clearer.

The next step in development of institutions of education was expanding the program of the elementary school, taking into curricular consideration the ethnic, religious and other characteristics of people vary across regions of Russia. However, there were no big changes: the curriculum continued to focus on separate subjects.

School funding increased as the government recognized the role of education in the wellbeing of the country (Leontev, 2001). Many schools were able to found libraries for students and small school museums of collections providing teachers with visual aids for lessons (Gurkina, 2001). Development of student creativity was finally recognized as a fundamental goal of education. Schools became more democratized with more schools founded to educate students from lower social-economic backgrounds (Leontev, 2001). The role of students changed as educators

started viewing students as equal participants in the educational process. That is why attention to students' creativity increased. Nevertheless, information and skills were in the center of the educational process, rather than the student. The goal of schooling was to "produce" people who would have a certain set of knowledge and skills, allowing them to work for the prosperity of the country. At that time, Russia was developing and quality, well-educated workers were needed. Therefore, private schools and universities started to emerge. Despite all this progress, the educational system in Russia was very far from being ideal. The level of education was low compared to other European countries and the United States (Leontev, 2001).

The Great October Revolution influenced everything including the educational system in Russia and curriculum in schools. Lenin viewed the school as an institution useful as a tool in building communism and producing new generations of educated, culturally developed citizens. Lenin saw schooling as the main institution to begin work on eliminating the gap between levels of education in European countries and Russia (Gurkina, 2001, p. 20). School was the place where the communist ideology was inculcated into the minds of students who were not yet able to think critically. After the October Revolution Bolsheviks led by Lenin, Krupskaya, Lunacharskiy and others started reforming public schools and closing private schools.

Bolsheviks destroyed everything that could be connected to pre-USSR culture, in an effort to create an absolutely new country with communist ideology. They applied this same rule to schools, teaching practices, and the curriculum. New ideology affected the curriculum: teaching of religion and ancient languages was forbidden. In addition, schools were obligated not only to educate, but to cultivate a socialist way of thinking in students. Bolsheviks decided to start anew: most

pedagogical achievements that were achieved before the revolution were ignored. However, the basics stayed the same: the basic educational unit in schools was a lesson; the curriculum was subject centered; and the role of the teacher was transmission of knowledge to students. The idea that everyone is equal had one negative side: the individuality of students was ignored, making the curriculum the same for all students. Schools attempted to change a person to fit the existing curriculum and teachers forced students to study.

Teachers were against those reforms because there was a drastic difference between the intentions of the Bolsheviks and the real-life situations of schools. During the first years after the revolution, schools were uniformly under-financed. There was not enough food; a shortage of paper and ink; and a lack of furniture.

In early 1920's, the government declared a national plan for elimination of illiteracy (Leontev, 2001). However, that plan was not that easy to fulfill. The young country did not have enough money; the teachers who were in schools before the revolution were fired; new generation of teachers did not yet exist; and teachers were unpaid for several years. Education was in crisis until the second half of the 1920's (Leontev, 2001). Finally, three types of schools, all having nine-year programs, were established: (1) the comprehensive school; (2) professional schools with a focus area such as schools where students prepared for professions like carpentry; and (3) schools that were a part of a factory where part of students' time was devoted to working in that factory. However the dire situation of the country regarding lack of finances, food, qualified personnel, and teachers in particular, led to lowering the quality of education in comparison to pre-Revolutionary Russia.

Much more attention was given to the political education of students in every stage of education, than to education itself. The common educational goals did not include developing students' individuality or helping them learn to see the beauty of art or music. A valuing of community over individuals was dictated by the ruling party. At that time and during years later, being different was considered a negative characteristic. The curriculum focused on science and other academics because the young country was trying to compete with other countries. Schools had to produce citizens who would be useful for the country. The Communist party's support of the defense industry determined the main bias of the school curriculum as technical. Thus the greatest attention was paid to mathematics, physics, and geography.

Schools and universities had a special subject called "Partiynoe obrazovanie" (Communist party education) as an invariable part of the curriculum in which students studied the Communist ideology, and history of the Communist party. All the educators who did not support the Communists party's ideology were fired.

During the Great Patriotic War of 1941-1945, schools suffered. Starvation, high rates of death, and extremely low birth rates affected schools (Gurkina, 2001). Students did not attend school because they were working in the fields, laboring at factories, and building defensive installations. Many students and teachers were fighting against fascists on the battlefields. However, the education system continued to develop. During the period of the Great Patriotic War, the age when a student began his or her education was set at age seven (Gurkina, 2001).

A required assessment system was established for all educational institutions (Gurkina, 2001). Grades were established on a five-point scale with a "five" being

equal to an “A” and a “one” being equal to an “E” or “F” – a failing grade. This grading system is still used in Russia.

In the decade of 1960-70, the school system of the USSR was flourishing as well as industry and science (Leontev, 2001). By that time the curriculum was established; the schools were well financed; and the educational system was highly valued. The quality of education during that period of time was considered to be one of the world’s highest.

Major changes in education occurred in the 1980’s (Leontev, 2001). The school system was released from Communist party control. The educational institutions were given more opportunities for self regulation and as a result teachers had more freedom to adjust the curriculum to the needs of students. Schools were given an opportunity to choose their curricula. Much more attention was paid to interaction and cooperation between the school, parents and students. The collapse of the USSR in 1990 affected the educational system. Funding of educational institutions was significantly lowered. The life of all the people in the country changed: many people lost their jobs and crime increased. People’s priorities and values changed as well.

The democratization of education resulted in greater attention to individuality of students. Schools with different emphases started to emerge during that time. It was the time of new experimental curricula and educational programs.

Traditional Primary Teaching Practices in Russia.

There are two systems of teaching students in the primary school: the traditional system and the developing system. The traditional system includes the following curriculum programs: “Primary school of the twenty-first century,” “School

two thousand one hundred,” “School of Russia,” “Harmony,” “Promising primary school,” “Classical primary school,” “The planet of knowledge,” and “Perspective.”

The developing system includes two curriculum programs: The program of L.V. Zankov and the program of D. B. Elkonin and V.V. Davudov (Materuinstvo, 2007).

“School of Russia” is the oldest program and the most widespread in schools. This traditional system of education was formed in the seventeenth century by the principles of didactics. Those principles were described by the historic figure Yan Amos Komenskiy (Contemporary Traditional Education, 2010, ¶ 10):

1. The scientific nature of knowledge (There is no false knowledge; there may be only incomplete knowledge).
2. The naturalistic character of knowledge (The educational process is determined by the development of the student and should not be forced).
3. The systematic and consistent character of education (The educational process proceeds linearly going from particular knowledge to general knowledge).
4. Intelligibility (The level of conceptual difficulty is always low in the beginning and becomes higher).
5. Strength (Practice makes perfect).
6. Consciousness and activity (Students should actively participate in the process of studying and understand that they need to study).
7. Use of visual methods.
8. The principle of connection of theory and practice.
9. Taking into account the age and individuality of students.

This system is characterized by certain features. Classes include about thirty students of approximately the same age and level of development. Usually students

stay with the same classmates in the same class through the whole period of studying in school. The basic study unit is a lesson. Each lesson is usually devoted to one subject and theme with students working on the same material. The teacher leads and guides the process of student learning; evaluates students' work, progress and effort; at the end of the year decides whether a student should be transferred to the next grade or repeat the current one. Textbooks are used by students on lessons at school and for homework at home. The scheme of teaching is (1) studying new material; (2) mastering new knowledge and skills; (3) evaluation. The traditional system focuses on building a student's system of knowledge rather than the generally developing the student.

The informational content to which students are exposed was shaped during the Soviet Union period. It was determined by the goals of the country (industrialization and forcing scientific and engineering progress). Nowadays, the informational content of educational programs is technocratic – focused on engineering, mathematics, science, and technology (Contemporary Traditional Education, ¶ 23).

Integrated Elementary Curriculum

The previous main section focused on the traditional elementary curriculum with examples drawn from the history of Russian education. In this main section, the integrated elementary curriculum is explored, drawing examples from the history of education in America.

Nancy G. Nagel in her book, *Learning Through Real-World Problem Solving*, exchanges the term integrated curriculum for the term integrative teaching and learning (Nagel, 1996, p. 2). She emphasizes the importance of the curriculum

being a dynamic process, which is adjustable to students' needs, abilities and wishes, rather than a fixed model.

Implementing an integrated curriculum means "... creating a curriculum drawn from multiple disciplines, various instructional strategies, and learning activities around a selected problem." This can be related to Bruner's term "discovery" (Marsh, 2003, p. 53). Bruner emphasized the importance of engaging students with a problem solving approach. Education is meaningful for students who are interested in solving the presented problem and provides them with a sense of ownership of the work. Organizing the educational process around the areas of interest of students and solving real-world problems are two of the key features of an integrated curriculum. The real-world problem solving approach is an integration of education with the life of students. Skills and knowledge that students obtain in school should be applicable in the real world. One of the main purposes of school is prepare students for living in society, therefore making school and the educational process connected to real life seems logical in comparison to doing it vice versa.

A good example of how an integrated curriculum works is the way students learn to write (Nagel, 1996). Students know that they need to be able to write because they observe people writing in their daily lives. In school, students write during various lessons; however, on many of those lessons writing is not the main goal. During a science investigation, they gather data and write it in data tables. During such a lesson, students are working on solving a problem or answering a question; they are engaged in a meaningful, interesting activity, not just practicing writing. Thus, there is no need to make students practice writing skills, writing is integrated into many lessons and as a result, the skill develops quickly.

Students often ask the question “why should I learn that?” The hands-on approach, which is often used in the integrated curriculum setting, along with real-world problem solving approaches; eliminate the need of students to ask such a question. If problems, situations and materials used in the education process are taken from real life and are close to the experiences and interests of students, students have no need to ask about applicability. In addition, the knowledge that a student obtains on his/her own is much more stable and long lasting (Drake, 2007; Nagel, 1996).

An integrated curriculum implies inquiry-based learning (Zemelman, Daniels, & Hyde, 1998). That means that the question or the inquiry comes from the student. This makes the student the leader of the educational process and gives the teacher the role of facilitator or consultant. The teacher assists students in making connections between previous understandings and new knowledge, promotes discussions, and helps students see the full picture or big idea. This approach shapes the curriculum according to the interests of students. Learning through inquiry teaches students responsibility because they take the main role with minimal teacher guidance: they gather information; they analyze it; and draw conclusions. Inquiry based learning gives students an opportunity to collaborate. Students share the duties to reach a common goal. Discussing different variants of solving the problem or answering the question increases interactions between students, promotes critical thinking, and teaches them to compromise and reach consensus. Team work is often used during lessons in the integrated curriculum setting. Each team has its own part of the assignment. When each team’s work is complete, students share the results, discuss, compare, and then draw a conclusion.

An integrated curriculum supports principles of constructivism. For example, constructivists hold that students need the opportunity to learn authentically by exploring the world and asking questions. During such explorations, students use knowledge of different subjects. “In both the constructivist model and integrative teaching and learning, learning is viewed as an activity pursued by the student, with learners engaged in their environment and as active participants in constructing knowledge, which is in sharp contrast to the belief that knowledge is simply transmitted from a teacher to students” (Nagel, 1996, p.7). Problems that students address during the lessons should be important not only for them, but for the community. This is an implementation of John Dewey’s idea of importance of the involvement of each person into the life of the community. Students want to be full members of society, making meaningful accomplishments. Even when students play they have a goal; studying takes a great deal of students’ lives, so it should also have a goal that is meaningful for them (Drake, 2007; Nagel, 1996).

An integrated curriculum requires collaboration between teachers. For example, if students are going to write a letter to a pen pal from Spain during a Spanish lesson, the Spanish teacher may ask the writing teacher to teach the friendly letter format. In this way, teachers may adjust the curriculum to meet the needs of students. The borders between lessons become thinner; students study a unit which involves knowledge of different subjects. Each teacher instructs a part of the unit connecting students’ current knowledge to the knowledge students obtained on other lessons.

The integrated curriculum provides students with basic knowledge and skills obtained through a real-world problem solving approach that provides students with

situations in which they can implement their knowledge. While working on solving the problem, students learn to think critically and make decisions.

History of Curriculum in the United States.

According to Marsh and Willis there are three focal points for curriculum history (Marsh, 2003, p 22). Where is this reference? The first one is nature of subject matter. This term describes the way subjects represent the surrounding world. How they help students create the full picture of the world, see the connections and relationships. The second one is the nature of society. The curriculum has to reflect the society its values, political and economical characteristics. The third one is the nature of the individual. The curriculum needs to meet the nature of the each and every student, create the best opportunities for each student (Marsh, 2003, p 23).

The curriculum of the first schools included the following subjects: Logic, Declamations, Rhetoric, Greek and Latin grammar, History, nature of plants, Catechetical divinity, Syriac: New Testament (Marsh, 2003, p 29). The curriculum was subject-centered.

The first person to indicate the needs of changes in the curriculum was Benjamin Franklin. He supposed the curriculum needed to meet the needs of real life of settlers. He supposed that the only mandatory language had to be English; all the other languages had to be elective. He also wanted other subjects to be added to the curriculum (e.g. physical education, religion, geography) (Marsh, 2003, p 29). In 1862 Congress passed the Morrill Act, which supported creation of public colleges that were devoted to agriculture and mechanical arts and extended the idea of a society centered curriculum (Marsh, 2003, p 32).

The general tendency of education in nineteenth century was the shift from traditional subject centered curriculum to society centered curriculum. However that process was not smooth. There were a lot of advocates of both kinds of curriculum.

In 1876 the National Education Association created a report, "A course of study from primary school to University" (Marsh, 2003, p 33). The main idea of the report was connecting the three levels of education (elementary school, secondary school and university) using a single curriculum. In 1895 the Committee of Fifteen was created (Harris, 1985). The report included recommendations for schools about subjects to teach, how many times per school day a certain subject has to be taught, what the length of each lesson should be. The curriculum which was shaped after the Committee of Fifteen report was still mostly subject centered.

In 1900 John Dewey advanced an idea of integrated curriculum which would be connected to real life (Association for Supervision and Curriculum Development, 2002, p 7) Dewey also claimed that experiential approach to learning provides students with more firm knowledge and skills because students obtain knowledge by themselves.

At the beginning of the 20th century the problem of teaching a large volume of subjects became extremely important even in elementary schools (Marsh, 2003). Many subjects such as nature studying, drawing, music and others were added to the curriculum. The necessity to prevent overloading students with information and assignments resulted in the modern curriculum movement (Marsh, 2003). Thus in 20th century there were two forces influencing education: traditionalists who were pushing subject-centered curricula and a group of nontraditionalists who were for individual-

centered curricula (Marsh, 2003). The most important proponent for progressive education was John Dewey. His ideas underline progressive education (Marsh, 2003).

Progressive approaches to education emerged in 1930. “These approaches, however, tended to be extremely student-centered and emphasized activity for activity's sake. Curriculum organizations emerged to bring more rigors to progressive approaches. Statewide curriculum development projects were undertaken in Virginia, Arkansas, Kentucky, Texas, Georgia, and Tennessee. It was determined that 80 percent of schools in the United States had some form of interdisciplinary curriculum” (Association for Supervision and Curriculum Development, 2002, p 7, ¶4).

Three focal points of curriculum history should be taken into consideration when making any decision about the curricula. The first focal point (Beane, 1977; Marsh & Willis, 2003) is the nature of the subject matter itself. That means that the subject matter being taught should adequately represent the surrounding world and its own inherent logic. The second one is the nature of society. The curriculum should reflect a broad range of the cultural, economic and political characteristics of the society in order for the students to be able to fit into the society and be able to make changes in it. The third focal point is the nature of the individual. The curriculum should meet needs of students and their interests to make each student maximally benefit from it. Dewey's idea was keeping those three focal points in an appropriate balance. Though sometimes it was misinterpreted by both traditionalists and nontraditionalists and one of the focal points was given priority. Thus Dewey's ideas were not fully implemented in schools.

Due to rapid changes in society and the necessity of adjusting the curricula according to changes in society, the Commission on Reorganization of Secondary

Education was founded. Though elementary school was less influenced by changes in society than secondary school, the seven main objectives that the commission developed were applicable to elementary school as well. The seven main objectives are health, command of fundamental processes, worthy home membership, vocation, citizenship, worthy use of leisure and ethical character. The establishing of these seven main objectives of education was a big step towards the progressive education. In 1918 Franklin Bobbitt wrote "The Curriculum." It included an explanation of curriculum principles and principles of creating curricula. According to the book the role of school is to replicate the society and to help each student fit into the society.

The next step in attempts to implement Dewey's ideas was student-centered pedagogy. The student-centered curriculum stated that the school should let the students' nature guide their studying and the main purpose of school is protecting the students from outside influence. The spontaneity of students' actions was the main thing teachers valued. Scientists say that a curriculum should be student-centered, but it is very important to honor all three focal points of the curriculum. A further stage of curriculum development was a committee of leading curriculum scholars of the time, which consisted of people advocating opposite points of view on the curriculum. The result of the committee's work was eighteen central questions which represented the principal foundations of the curriculum and decisions about the curriculum. Questions were based on the Dewey's three focal points. Though there was no theory of the curriculum that would meet all three focal points found, this committee united and theorized all previous work on the subject of curriculum.

The curricula of many American schools were still subject-centered in the beginning of the 20th century. One reason for this was that teachers didn't have any evidence that individual-centered curricula would work.

“By the late 1980s there were new calls for reform in papers such as *Caught in the Middle* (California State Department of Education, 1987) and *Turning Points* (Carnegie Council on Adolescent Development, 1989). These papers focused on making school relevant for students. Attention turned again to integrated curriculum” (Association for Supervision and Curriculum Development, 2002, p 7).

The first among the most significant evidence of effectiveness of the individual-centered curricula was the Eight-Year study. That study also provided important data and training for teachers. In 1930 the Progressive Education Association (PEA) organized a Commission on the Relation of School and College. No matter how efficient the results were, there was a problem in implementing results of The Eight-Year Study. Teachers were not sure that students will be able to qualify for entering a university if schools do not follow the pattern of subjects suggested by universities. Thus the Commission had two stated purposes: “(1) to establish a relationship between school and college that would permit and encourage reconstruction in secondary school. (2) To find through exploration and experimentation, how the high school in the United States can serve youth more effectively” (Aikin, 1942, p. 116). The Eight-Year Study demonstrated that the individual-centered curriculum is at least as effective as the traditional curriculum. Unfortunately the results were not implemented immediately. The United States of America and many other countries were involved in World War II. The war postponed the implementation of the results of the Eight-Year Study. A conservative

mood occupied people's minds. Schools were encouraged to implement subject – centered curriculum. The public decided to have students be taught the traditional way rather than experimenting with new methods. The goal was academic excellence.

In October 1957 the Soviet Union launched the first satellite, named Sputnik, to the Earth's orbit. That happened during the period of the Cold War between USA and USSR. The launch of Sputnik was perceived as a threat to the security of the USA and seemed to prove the Soviet superiority in military, science and education over the United States. Sputnik was a great stimulus for American educators to seek for ways of improving education. The idea of a universal curriculum for the whole country was emerging during that time, although it was contrary to American values such as independence and individual initiative. Again schools were strongly encouraged to use the subject-centered curriculum in order to have each school train its students for superior performance in all subjects, especially math and science. The federal government provided funding to create a series of curricular packages which were subject-centered. Jerome Bruner's ideas played an important role spreading the usage of subject-centered curriculum (Bruner, 1960). The ideas were the following: (1) everybody processes the information in the same way. (2) The curriculum should be the same for all the students. (3) Bruner created a term "structure" which included the fundamental ideas of a discipline and which had to be a base for teaching that subject. The "structure" didn't include facts. The other term "discovery" which was also created by Bruner meant that students should be challenged by a question and interested in an educational situation. That interest and question should be stimuli for students so search for new information; search for answers and for self education as a result (Marsh, 2003, p. 53).

At the same time, general education advocates promoted common learning experiences. Such experiences included problem solving, critical thinking, and analytical research. The idea of a core curriculum emerged from general education. In core curriculum, learning activities and knowledge were organized around personal and social issues. It involved block timing and team teaching. Core curriculum remained popular during the 1940s and '50s" (Association for Supervision and Curriculum Development, 2002, p 7, para. 5).

"In 1930s the Eight-Year study was conducted. Researchers investigated how well students would do in higher education if they were educated in schools that were student-centered and learned the skills and social orientation for a democratic way of life" (Association for Supervision and Curriculum Development, 2002, p 8, para. 1).

The next important event was the Curriculum Reform Movement. In 1950 several curriculum packages were created (Johnson, 2010). Those curriculums were not approved by teachers, because they allowed too little freedom for teachers to adjust the curriculum according to student's needs. Besides the opinion, that the nation needed one single curriculum, was spreading among the country. Education was becoming more and more valuable for people, because educated people had more opportunities in life than uneducated people. The other movement that occurred those days was movement towards making teachers responsible for what the students learn. This was an attempt to make the education in schools more efficient.

The National Commission on Excellence in Education (NCEE) recommended all the educational institutions to raise the standards and make them more measurable. The school day and the school year had to be prolonged. The

citizens got more opportunities to influence schools: they were able to elect officials who would supervise schools and watch for fulfilling the recommendations of NCEE.

Progressive Education of John Dewey. One of the goals of progressive education is making schools a part of a democratic society, in the sense of making the school a place where students learn how to be members of a democratic society. School has to teach students be good citizens and active participants in economical, political, and social life of the school, city, country. Reaching that goal of progressive education is based on two principles that were formulated by John Dewey in 1830. The first principle is individual approach to each person (respecting individuality of each person, respecting abilities of a person, interests, opinion, culture etc.). The second principle is engaging each person in the life of the community, developing collaboration between members of the community and working on reaching the goals of the community. Progressive education is a part of student-centered pedagogy. As opposed to traditional education, the progressive education is based on the needs of a student, thus there is no need to make a student fit the curriculum. Traditional curriculum setting used drill a lot; the role of the teacher was to assess students' works, not facilitate discussions.

Until recent time Dewey's principles were not given enough attention. Sometimes one principle was given more attention than the other, but for the best results they have to be balanced. There was no emphasizing of critical thinking in schools, no emphasizing of importance of the diversity.

John Dewey was implementing his ideas and principles in a school in Chicago. He described them and his experience in his works (The School and Society, The Student and the Curriculum, Schools of Tomorrow and many others). John

Dewey had a lot of team-mates and followers (Margaret Naumburg, George Counts, William H. Kilpatrick and many others). They were publishing “The Social Frontier” – a journal where they advocated the ideas of John Dewey and progressivism. Progressivists were emphasizing the importance of development of students’ creativity, artistic skills as well as technical skills. However during the 1920s progressivists were in minority. Due to difficult economical and social situation of the Great Depression, schools for the most part were paying more attention to developing technical skills, thus and so to such subjects as Math and Science. However, Columbia University was the stronghold of progressivists where in Teachers College students were taught based on Dewey’s ideas. To prove that the progressive education gives good results, the Eight – Year study was conducted. In 1942 the five volume report named “Adventure in American Education” was published. This study was focused on relationship between high schools and colleges. Students in schools where integrated curriculum was implemented were paired up with students from schools with traditional curriculum. Then those students were followed through college. The results were the following: students from experimental schools (schools with integrated curriculum) were doing as well or even better, than students from traditional schools. The study also proved the effectiveness of Dewey’s ideas of progressive education and necessity to teach the whole student. Educating the whole student means that school is not only a place where students get education, but a place where students learn to be good people, good citizens. In other words school not only educates, but also teaches how to live.

Progressive educators emphasize importance of collaboration. It connects with the second principle of John Dewey (engaging each person in the life of the

community). School has to have a good balance of valuing individuality of each student and teaching them to work together as a team; emphasizing the importance of collaboration; teaching students to value goals and needs of the community as well as their own ones. The interest, attention and care of students should not be focused on their family, friends and school. It should spread on the city, state, country and finally the whole planet. School should not only teach that, but also give students opportunities to implement their ideas and do something for other people, help them improve their lives. For example organize a visit to a retirement home. In other words school should teach students to have the sense of community and responsibility for people around.

Sometimes students say phrases like “You can’t make me do that!” “Why do I have to study all that?” or “There is no point for me to study this!” Progressivists emphasized that school has to motivate, rather than force, students to study. School has to aim for helping students start owning their studying and gaining the intrinsic motivation for studying and self development. School has to also create opportunities for student to be actively engaged in studying by creating learning situations that would require students not just retell something they have read or heard, but think, make choices, decisions and be creative. That means that education should challenge students and teach them aim for more.

Based on Dewey’s ideas progressivists see school as an environment which changes depending on students, not on curriculum. That is why one lesson taught in different classes by the same teacher will not look the same. It is not students who have to change themselves in order to fit the curriculum; the curriculum should meet needs of each and every student.

Constructivist Education. There are several trends or schools within constructivism: social constructivism of Vygotsky, personal constructivism of Piaget, radical constructivism of Glasersfeld, constructivist epistemologies, and educational constructivism. Social constructivism and educational constructivism are considered to have had the biggest impact on education today (Jones, 2002).

Constructivism came in the stead of behaviorism. Behaviorism put all the responsibility for the teaching-learning process on the teachers' shoulders. That also meant that that students did not have to have much initiative or impact on teaching-learning process. Students had to watch, listen and remember what the teacher wanted them to and were not actively engaged into learning process. On the contrary, constructivism main idea is active engagement of the learner into the meaning-making education. The focus of the constructivist education is knowing as a process not as a product (Jones, 2002).

Constructivist theory has many similarities with John Dewey's principles. According to constructivists theory knowledge is connected to the learner and can't exist outside of the learner. Dewey also emphasized the importance of students being actively engaged in learning process and the necessity of the curriculum to meet the needs of students not vice versa.

Constructivism is one of the main bases of the Integrated Curriculum. The concept of building new knowledge on the basis of the existing knowledge is one of the ideas of Piaget's constructivism. Teachers have to remember, that the mind of a student is not a tabula rasa. Students come to school with their own life experience, preexisting knowledge conceptions and misconceptions. Teachers should take that into account when working with students because students look at new information

through the prism of knowledge they already have. Researches show that it is very difficult to change the misconceptions students have because for the student it is not a misconception. He or she sees some kind of logic in that misconception. That is why the teacher has to create a learning situation which will make student think critically and analyze the conception, then recognize the conception as a misconception and correct it. In this process the role of a teacher is the facilitator (as opposed to the behaviorism theory in which the role of the teacher was the leader and the role of the student was the object); the role of the student is the leader, inquirer, subject actively engaged into learning process.

To sum up constructivists view learning as an active process in which students are leaders. They consider prior knowledge of students as a base for the newer knowledge and conceptions. Main idea of constructivism is that knowledge which is obtained by students, after overcoming a challenge or solving a cognitive conflict facilitated by teachers, are much more deep and strong.

Nowadays the influence of the philosophy of constructivism (cooperative and collaborative learning; using older or more advanced students as tutors; classroom organization which takes into account the necessity of individual, small group and whole class work) can be seen in schools with integrated curriculum setting.

The foregoing sections have set the context for this study. My interest in the topic of curricula grows out of my own elementary schooling and my higher education experience of studying the integrated curriculum in the United States. The history of Russian education and the history of American education are used here as prototypes for the traditional and the integrated models respectively. Now that a

context for the study has been set, the recent literature on integrated curricula will be explored.

Recent Literature on the Efficacy of an Integrated Curriculum

Rationale for Integrated Curricula

Wraga (2009) articulated three important reasons for implementing an integrated curriculum. First, educational experiences in which learners make connections to previous learning and their personal everyday lives are more meaningful; an integrated curriculum facilitates these numerous connections. Taking a concept-based approach to organizing the school curriculum assists learners in making intra- and interdisciplinary connections and in identifying patterns. It expedites the melding of new and old knowledge, with transfer of learning to new situations (Erickson, 2002; Hockett, 2009; NCTM, 2000, 2006; NCR, 1998). Second, real life experiences are complex with everyday problems requiring skills and knowledge from different areas. The school curriculum should model a similar situation to prepare students for the real world. Third, social problems and issues (such as environmental degradation, urban violence, unemployment) require citizens to make informed decisions that integrate information from many areas. "Society does not function in distinct categories and the creation of separate disciplines discourages recognition of the unity of knowledge" (Mei, 2009, p. 40). School, therefore must provide students with practice in applying knowledge from different subject areas to complex problems.

Additionally, Bresler and Latta (2009) noted that the pressures of an ever-increasing, crowded curriculum can be relieved by integrating learning experiences in an in-depth, holistic way, providing students with skills to generalize from one

situation and apply that principle to another. The mandates of No Child Left Behind legislation require an emphasis on reading at the expense of other subjects (Boyle-Baise, Hsu, Johnson, Cayot Serriere, & Stewart, 2008; Center on Education Policy, 2008). Curriculum integration of social studies can help teachers address more than one subject area in the same time period while providing meaningful connections to real-life problems (Hinde, 2005). An effective example integrative social studies unit connecting the September 11 event with literature and mathematics is described by Kinnburgh and Byrd (2008).

Zmuda (2009) recognized the rapid increase in technology use of the current student population resulting from living in the 21st century. She identified two key questions that schools should answer: “What are you here to learn? and How would you prefer to learn it?”(Zmuda, 2009, p. 16-17). The answers to these questions should help students engage in meaningful activities that contribute to their understanding of their roles in the world helping them develop goals. Students, the majority of whom go online each day at home and at school, prefer a technology-integrated curriculum in which they remain connected to others electronically. This approach has the advantage of allowing students to share information and the results of their projects, receiving feedback through online comments.

Two authors suggested art integration as a vehicle for more meaningful learning and stimulation of creativity. Viglione (2009) noted that because of the increased pressures of standardized testing, the arts are often eliminated from the curriculum. However, the arts provide an important educational component that contributes to a student’s sense of personal accomplishment as the student develops and displays creativity. The relentless focus on accountability has reduced healthy

school relationships and prevented students from performing in a setting that meets their learning style needs. Viglione suggested that more students would reach their potentials through arts-integrated curricula, arguing the success of an arts-integrated curriculum in a charter school. Marshall (2005) stated that because learning is essentially a situated, socially-constructed activity, it makes sense to have students work in teams to solve problems. Marshall also emphasized the connections between culture, experience, emotion, and higher-order thinking with the content to be learned. Marshall found that art was the perfect medium to integrate symbolism with these other aspects.

Recent Studies Related to Integrated Curricula.

An early analysis (ERIC Development Team, 2000) of the results of numerous curriculum integration studies concluded, “Almost without exception, students in any type of interdisciplinary or integrative curriculum do as well as, and often better than, students in a conventional departmentalized program. These results hold whether the combined curriculum is taught by one teacher in a self-contained or block-time class or by an interdisciplinary team” (p. 5). More recently, Anfara and Lipka (2003) along with Mertens and Flowers (2003) showed that middle schools implementing a student-centered integrative curriculum had students who out-performed students in traditional classes on national and state standardized tests and program –based assessments. Students also showed more growth on these measures across their middle school years than students at other schools.

Two studies addressed arts-integrated programs. Trent and Riley (2009) implemented an art-integrated social studies curriculum for urban fourth graders. They found that this integration of subjects supported student motivation, engagement,

and learning, with students evidencing a solid commitment to human rights and democratic dispositions. They noted that students showed a high degree of transfer of learned concepts from the unit to everyday life, changing behaviors as a result. Bresler and Latta (2009) analyzed case studies of 18 at-risk upper elementary students who participated in an arts-integrated unit titled, *My community: The power of story* at a low socio-economic school. They found improvement in student motivation and engagement, increased respect for self and others, increased self-control, and meaningful self-expression.

Curriculum integration has been examined in gifted education and science. Hockett (2009) presented three different curriculum integration models that have been effective for gifted students and that meet national standards. These models helped educators differentiate the curriculum so that all learners were exposed to challenging instruction. Similarly, Rule and Barrera (2008) explored three different integrated curriculum approaches that incorporated technology and thinking skills. They found students were highly motivated in all three integrated curriculum settings. Basir and others (2008) studied student learning in a physics course that integrated photography and problem-solving, finding that high school students exhibited increased motivation and the ability to transfer physics knowledge more easily to real-world problems.

Teachers and Curriculum Integration

Ultimately, the success of a curriculum rests with the teacher; therefore it is important to consider the professional development of teachers concerning integrated curricula. Hardman (2009) suggested implications of recent research showing the efficacy of an integrated curriculum for teacher preparation. He emphasized that teacher education programs need to reflect best practices and the needs of a 21st

century society; therefore universities need to implement programs that focus on the integrated curriculum model. Dowden (2007) in an analysis of two different integrative curriculum approaches for middle school, noted that one of the most powerful forces opposing integrative curriculum comes from teachers themselves – “middle grade teachers’ own conceptions and views of themselves as ‘subject teachers’” (p. 65). Therefore, teacher preparation needs to include a special emphasis on curriculum integration to mold teacher’s self-views as curriculum integrators.

Park (2008) conducted a case study of three Korean elementary teachers implementing an integrated curriculum for the first time. Park found that teachers lacked an appropriate theoretical framework for curriculum integration because of their previous focus on traditional curriculum and their limited knowledge of terms related to curriculum integration. Park identified factors that influence teachers to resist curriculum integration and return to more traditional teaching methods. These include teacher identity, assessment structure, content-laden curriculum, content-specific texts, and excessive teacher duties.

School factors can influence the success of an integrated curriculum. Wallace and others (2007) examined data from two studies of middle school integrated curricula to identify factors that supported and inhibited implementation of the curricula. Among the factors that support integrated curricula are: administrative and community support, teaching teams, committed teachers, collective vision, planning/meeting time, flexible schedule/timetable, and dedicated classroom space. Among the variables that hindered this integrated approach were staff turnover, community wariness, teacher workload, teaching out-of-field, lack of materials, and lack of time.

Virtue, Wilson, and Ingram (2009) suggested ways for teachers unfamiliar with implementing an integrated curriculum to begin the process. They advised that teachers start small, with a short unit or two based on a problem related to the required curriculum, but using resources from the local community. They recommended that teachers allow students to help them develop some of the goals or central questions of the unit. Some ways to easily integrate different disciplines are through read-alouds, WebQuests and critical literacy activities in which students explore and analyze various documents related to the topic.

In the next section, the design of the study is presented, showing how the data collection provides information that will answer the study questions.

CHAPTER 3

METHODOLOGY

Purpose

The purpose of this study is to compare lessons in two conditions, both occurring at the primary grade level: (1) subject-integrated lessons of an integrated curriculum unit; and (2) single subject-focused lessons of a traditional separate subject curriculum. Specifically this study seeks to answer the following questions:

1. What does implementation of an integrated curriculum unit look like in a primary classroom?
2. What does implementation of a traditional curriculum unit look like in a primary classroom?
3. How are implementation of an integrated curriculum and implementation of a traditional curriculum alike and how are they different?

Research Design

This is primarily a qualitative research study that uses the method of constant comparison to group observations into categories. These observations have been counted, however, to determine the relative frequency of the identified categories and to more easily compare observations under the two conditions. Therefore, the study contains some quantitative components, making it a type of mixed-methods study.

Mixed-methods research is “research that combines quantitative and qualitative methods.” (Slavin, 2007 p. 8 ¶ 5) In this type of data collection and analysis, both research methods contribute significantly to the study.

Some of the strengths of this approach are that narrative can be used to give examples of what the numbers represent. The quantitative counts can help in comparing the two research settings to respond to a broader range of research questions and to triangulate between the two types of data, providing stronger evidence for a conclusion (Mixed method and mixed model research, n. d.).

Several variables were controlled to make the conditions parallel. One person, the researcher, conducted all observations. All observations occurred in the same school during the same school year with students of the same grade levels (grades 1 and 2). Both stages included seven days of observations; each day the researcher was observing teachers or preservice teachers for two hours. Unfortunately, because of timing constraints, only one classroom of students, Classroom A, was observed in the traditional single-subject unit, while two classrooms A and B were observed during the other integrated unit condition. Another limitation was that only one subject area – mathematics – was observed in the traditional condition; a better situation would have been to have several single subject lessons observed. Regrettably, this could not occur because of timing constraints.

Participants

This study was conducted in two stages, each stage providing observations of teacher talk and actions under a different condition. In the first stage, the participants were preservice teachers who were teaching elementary students as part of a practicum experience. They were divided into two groups because each group originated from a different section of a methods course. The first group, consisting of 23 Caucasian preservice teachers (22 female, 1 male) taught first- and second- graders (16 elementary students) in Classroom A at 9:00 AM for an hour. The second group,

consisting of 25 (22 female, 3 male) Caucasian preservice teachers, taught first graders (14 elementary students) in Classroom B at 10:00 AM for an hour.

During the second stage of data collection the participants were two experienced Caucasian female primary school teachers.

Observations

To address the research questions, the researcher observed 14 lessons in each of the two conditions identified previously. All lessons were conducted in first and second grade classrooms in the same elementary school and lasted approximately one hour. Teacher talk and actions were directly observed rather than talk or actions of the elementary students.

While observing the lessons of each condition, the researcher wrote field notes using an observation template (see Appendix A). The observations addressed the following:

1. Structure of the lessons.
2. Methods used for instruction.
3. Motivational techniques employed by the teachers.
4. Questions posed by teachers.

The content focus for the integrated unit lessons was African culture. See Table 2 for details of the instruction. Similar lessons were observed in two classrooms, Classroom A and Classroom B at the same school. The students in Classroom A were a mixture of first and second graders; those in Classroom B were all first graders. Both classrooms were arranged with clusters of desks and a community space with a thick rug for seating. Computer stations were situated along a wall. Student work was

exhibited along with books related to the lessons being taught. Both classes showed racial diversity and a range of ability.

The observed lessons occurred for an hour at 9:00 AM and 10:00 AM, in Classrooms A and B respectively, approximately once a week for seven weeks, resulting in 14 hours of data. Lesson content was integrated across many subject areas with concepts drawn from literacy, social studies, science, mathematics and the arts. These lessons were taught by preservice teachers working in small groups with two to three elementary students while completing a field experience during a social studies methods course. Although the classroom teachers were present, they did not actively participate in the lessons.

The content focus for the tradition single-subject lessons was mathematics with some lessons addressing measurement of time while other lessons focused on money concepts. See Table 4 for details of the instruction. Students were observed in Classroom A at 12:15 PM for two hours a day for seven mostly-consecutive days, resulting in 14 hours of data.

The collection of the data occurred in two stages. The researcher first collected the data in the integrated curriculum setting from 10/16/2009 to 12/02/2009. The second stage of the research started 01/21/2009 and ended 01/29/2010.

Table 2.
Schedule of Integrated Africa Unit Lessons Observed during Phase 1.

Day	Activities
1	Show 12 cards with images of masks of the African People on which that group will focus. Have students sort the card in various ways and read or listen to captions about mask features and customs of the people.
	College students show the masks they have made and point out defining characteristics.
	College students show card sets with images related to the foods, clothing, housing, geography, flora, fauna of the area in Africa in which the people live.
2	Students continue sorting sets of image cards of foods, clothing, housing, geography, flora and fauna.
	Elementary students tell the five features characteristic of that group that the masks will show.
	Preservice teachers bring a plain mask shell and elementary students form three-dimensional features on it.
3	Preservice teachers help elementary students finish any 3-D features and cover the entire mask with glued-down recycled white copy paper.
	The masks are painted with the white gesso undercoating.
4	The base color or colors of the mask are painted.
	The preservice teachers present an African legend of their people through reader's theater, puppets, big books, or stories theater.
5	Elementary students paint details on the mask front.
	Elementary students make and glue inside the mask five items to show what they learned about these African People. These included a map of Africa with the country colored, the name of the people, animals, vegetation, landforms, foods, clothing, or crafts.
6	Preservice teachers help students complete items for insides of masks.
	Preservice teachers help students add to places and features of an African Village map.
	Preservice teachers plan the presentation of masks and information that will occur on the next visit.
7	Each group presents their masks and tells important mask features and meanings. They also tell about the customs and culture of the people including clothing, food, geography, etc.

The following table 3 represents the Schedule of Traditional Mathematics Unit Lessons Observed during Phase 2.

Table 3.
Schedule of Traditional Lessons Observed during Phase 2.

Day	Activities
1	Students practiced setting up a certain time and telling time by looking at clocks with help of the teacher. With the help of the teacher students found out how the movement of clock hands correlates with time run. Students with the help of the teacher learned how to tell minutes using clocks which do not have numbers of minutes written on them. Students with the help of the teacher learned which hand shows minutes and which hand shows hours. Students with the help of the teacher learned how to tell what time clocks will show after a certain period of time.
2	Students worked independently in their books; finished two pages. Some students took math packages after finishing the second page of the book. Students read math books independently. Students made ramps using pieces of wood and a marble to test them.
3	Teachers asked students questions in order to find out what they already know about money. Students read books about money. Students played computer games related to money. Teachers gave students a quiz to see what students learned during the lesson. Teachers showed students different kinds of money from different countries.
4	Students listened to speakers who wanted to share some information about money or brought some coins to show. Students and teachers discussed the terms “needs” and “wishes,” then created a table “needs” and “wishes” which included the information about what they need and what they want. With the help of teachers, students defined terms “needs” and “wishes”. Students came to a conclusion that some things can be put into both categories (“needs” and “wants”)
5	Students and teachers played a game “sparkle math.” Teachers tested knowledge students got about money on previous lessons by asking them questions. Students who had some new information about money to share shared their information. Students watched a movie about the history of money, the process of making money, protecting money and foreign money. Students were asked questions about the film to find out what new information they got.
6	Students had a math competition. Who adds and subtracts numbers faster. Students who wanted to share some information about money shared it. Students were tested if they can define the coin by looking at the back side of it. Students played Money Bingo. Students were spending money they earned during the lessons in the class store.

7	<p>Students had to do a math test (checked their addition and subtraction skills). They had to solve as many problems as possible in a minute. With the help of the teacher, students studied the difference between parallel and not parallel lines. Students learned different figures (e.g. hexagon, pentagon, octagon.) Students learned the features of polygons and with the help of their teacher found out which figures can't be considered a polygon. Students studied platypus: they wrote down three facts about platypus and drew platypus in their booklets.</p>
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During the integrated unit lessons on Africa the observer watched two small groups of approximately three to four preservice teachers at a time by positioning her chair at a place between the groups. The researcher observed different groups the next time so that a survey of what was happening in all groups was recorded.

During the traditional mathematics curriculum unit the researcher observed both teachers at the same time.

Data Analysis

Following each lesson observation period, the researcher transferred field notes to a spreadsheet. The spreadsheet had four pages, one for each category of observation. The notes for each category were separated into distinct ideas and one idea was transcribed onto each line of the spreadsheet. Then, in the second column, the researcher identified a category title that fit one or more observations. The sorting functions of the spreadsheet were used to facilitate sorting of the observations. As observations were considered, the category titles sometimes shifted to reflect broader or narrower categories in the constant comparison method (Dye, Schatz, Rosenberg, & Coleman, 2000; Goetz & LeCompte, 1981). The number of observations in each category were then counted and reported with example observations.

Now that the methods of data collection and analysis have been described, the results of the study will be discussed in the next chapter.

CHAPTER 4

RESULTS

Observations of the Integrated Curriculum Unit

Tables 4-7 show analyzed data related to the four different categories of data collection in the integrated curriculum unit that focused on Africa.

Table 4 shows the instruction methods observed during the Africa unit sessions between preservice teachers and elementary students. Overall, the data support a very cooperative work atmosphere with the most observed dialog centering on collaboration rather than direct instruction, although the latter did take place also. Preservice teachers connected actions to the goals of the project and helped students use these goals as criteria for making decisions. They also helped students link their previous knowledge with the current work. Eleven observations of preservice teachers using behavior management techniques were recorded. In general, preservice teachers respectfully guided students to best choices in a firm but friendly way.

Table 4.
Instructional methods observed in an integrated curriculum unit.

Frequency	Category	Example Dialog or Observation
72	Suggestion to student to improve technique from Preservice teacher:	Preservice teachers suggested that they had to finish painting masks white that day to let the masks dry. We can cut it with scissors, not just tear it apart! We probably need a little bigger brush.
70	Direct instruction or command from preservice teacher	Put some paint on the side. You need some more paint here. Now you have to write "Bamana" on this piece of paper.
33	Plan of accomplishing the goal briefly reviewed by preservice teacher	You'll need to know how their money looked like. This time we are making the main colors and next time we are doing details. We are going to do the papers first: on one of them I want you to draw an African food, on the other one I want you to draw an animal.
31	Behavior management comment or instruction	That is not a choice. You can go and sit at your place or you can stay with us and work. Please put these things away.
18	Helping student with criteria or alternatives for a decision	It's yours now – you decide what to do with it. You can do it how ever you want (you can use any color). You can use either crayons or markers, depending on what you like.
13	Offering help for managing materials and space	I've got an idea! Can I draw a circle for you so that you know the size the bank should be. Let's see if we have any room for the snake here. I'll try to cover it up for you.
7	Previous knowledge connected to mask work	Students would ask questions like "why" the nose of the mask is bigger, than the human nose. Student - teachers would ask students to group cards according to the absence or presence of a feature or a pattern.
7	Safety instruction	Don't lick your hands, there are germs on them. Put the scissors back once you do not need them.
5	Gathering information for next steps	Do you want to go ahead and cut this out? Are you ready?
4	Example given and direct instruction	Student teachers would show how much paint they should put on their masks. Students would help by holding masks.
4	Agreement with student's ideas of technique	After student asks for gold preservice teacher says you will get it in a little bit. Will you use this paper again? Why not? I think you can. Ok. That will work.

Table 5.
Motivational techniques employed by preservice teachers in an integrated curriculum unit.

Frequency	Category	Example Dialog or Observation
75	General praise	It looks good, doesn't it? Good job! Oh, that's very interesting! That is awesome! I like that! There you go!
17	Individualized comments	Taking these beads looks like a really good idea! This is a really colorful giraffe!
7	Building self esteem and confidence	Different groups have different tasks, so don't worry, you're doing a great job. Everybody has to do it differently (masks). We want each mask to be unique.
6	Goal setting	We are going to have a mask all about you. We will make the mask <i>you</i> want. Student-teachers would always have the real masks and pictures of masks somewhere around to help students see the exact product and to help them understand that the goal is reachable.
3	Directions concerning hands-on involvement	Try to stick it (place it) and see if it is too big or not.
2	Teamwork to accomplish tasks	I'll get some scissors for you.

Table 5 shows motivational techniques used by preservice teachers during the Africa unit. General and specific comments praising the elementary student's work were most frequently observed. General praise was used to improve the overall mood of students. Specific praise was used to bring the attention of a student to his/her particular achievements. Preservice teachers were very attentive to the reactions and comments of students, noticing any indications of low self esteem. Each time a student displayed low self esteem; preservice teachers talked to the student, giving suggestions, asking questions, praising and explaining the situation to help the student gain confidence. Every once in a while during the lesson preservice teachers

would set a small goal for students and connect that goal to the main one (making masks). That was done so students would always remember the main goal and see the connections between it and every small step of the activity.

Table 6.

Questions posed by preservice teachers during integrated lessons.

Frequency	Category	Example Dialog or Observations
81	Asking for student's choices and decisions	Do you want to read for the parents? So what color do you want?
41	Connection to previous knowledge.	Do you guys remember what we put inside of our masks? What else do you know about Africa?
16	Checking for understanding of information, directions, requirements, and technique	What did you notice about the nose of the mask? Did you learn about monkeys when we were studying the Maasai culture?
15	Making sure the needed materials/equipment are ready	How many more beads do you need? Do you want me to go and find you a brown color?
10	Guiding self-assessment of product or task	Can you see any space on the mask that is not covered with paint? Remember what our mask looked like on the picture?
6	Assisting in planning to accomplish goal through teamwork	What do you need to make it all covered white? Are you done with the blue so that we can share?
5	General question about student's life to build rapport	How are you today? You must like brown huh?
4	Suggestion	How about putting "e" for eye? Could you please cut out more carefully?
4	Being sure that necessary information is known to accomplish next step	Do you know what the nose and mouth of the mask should look like?
1	Determining student's attitude toward the task	Are you ready, now?
0	Behavior management comment or instruction	

Table 6 shows questions posed by preservice teachers. The most frequent result was asking for a student's choice or decision. Preservice teachers often gave students a choice. This helped students feel ownership of the work. This also helped preservice teachers show students that there is always a variety of ways of accomplishing a goal and emphasize the importance of the student making decisions him\herself. There were a lot of questions that were aimed to help students make connections between preexisting knowledge and new knowledge. Many questions also connected the teaching at each stage of the mask project to its main goal. Preservice teachers taught students do self-assessment by asking questions. One of the main goals of schooling is teaching students independence and life-long learning; self-assessment is a vital part of endeavor. Preservice teachers worked as a team with students; taking part in the process of creating masks themselves. Preservice teachers sometimes asked students questions about their mood, life at home, and extracurricular activities to build rapport.

Table 7 shows observations of elements of the lesson structure. The greatest part of each lesson was devoted to teamwork. Teamwork included the work of students and preservice teachers together as well as the work of elementary students as a team. Teamwork helped students develop communication skills, improving the psychological climate in class. Teamwork also helped students see the importance of the effort and impact of each student team member. Preservice teachers taught students how to plan their work and then compare the outcome to the plan.

Table 7.
Observations of structure of the integrated lessons.

Frequency	Category	Example Dialog or Observations
20	Teamwork	Preservice teachers helped kids put beads on strings. Preservice teachers asked kids to help them clean up. Preservice teachers asked elementary students to go and sit on the carpet with them.
12	Demonstration of achievements and knowledge during group presentation to class	Bembe people told about the shape of their masks, shape of eyes on their masks, about houses of Africans, and explained what was painted on the masks. Maasai people told where they lived (Kenia) what animals they have in their part of Africa (zebras, hyenas...), and why they have clay on their masks.
9	Reviewing information learned previously with prompting	Do you know why people would wear masks? Preservice teachers took out their masks and lists, talking about colors of masks. Elementary Students had made lists of features & colors they wanted on their masks..
9	Planning ahead by making a sketch	Elementary students were asked to take a look at the pictures of masks again and tell which features they would like to have on their own masks. Preservice teachers made lists of features each student chose. Then students sketched what they wanted their masks to look like.
8	Sorting images and information	Students were asked to group images of masks according to presence or absence of a certain feature (nose, hair, beard etc. Students were asked to examine images of masks to determine the features they wanted on their own masks.
5	Organizing the work space	Students helped them take off their art clothes, wash their hands, put masks away.
2	Praise, rewards, incentive	Preservice teachers thanked elementary students for a good job.

Observations in the Traditional Curriculum Unit.

Tables 8 through 11 present the results of observations in the traditional curriculum lessons.

Table 8.

Instructional methods observed in a traditional curriculum unit.

Frequency	Category	Example Dialog or Observation
232	Direct instruction or command from teacher	Now you should look at problems we are discussing. B., come to this table, please. You have to figure out what number they skipped.
66	Behavior management comment or instruction	No side-bar conversations. D., excuse me, but we are not making lounge chairs here. Make sure you are listening.
27	Plan of accomplishing the goal briefly reviewed by the teacher	We are going to test our knowledge of time today. We are going to have some guest teachers, so we are going to do things a little bit differently today.
27	Helping student with criteria or alternatives for a decision	You don't have to do all but try your best. You can read by yourself or with a partner. Just try to do your best on the test.
20	Suggestion to student to improve technique from the teacher:	Be careful! Look at the small hand first, then look at the long hand. In your brain you should think "does the answer make sense?"
4	Offering help for managing materials, time and space	I will tell you when we get closer to the end of the lesson. Now we have about ten minutes to work on the ramps.
2	Agreement with student's ideas of technique	You can read the name however you think it should be read.
1	Gathering information for next steps	Let's look at page one hundred and ten. You should see clocks on your page and we need some readers for story number one.
1	Safety instruction	You need to be careful when carrying those pieces of wood.
1	Previous knowledge connected to mask work	Remember how we did yesterday: if they say it is two thirty, and the show starts in fifteen minutes, we do not start from the beginning of the clock, we start from two thirty and add fifteen minutes.
0	Example given and direct instruction	

Table 8 shows the instructional methods observed during the second phase of the experiment which was conducted in a traditional curriculum setting.

Instructional methods in the traditional curriculum setting consisted primarily of direct instruction and commands from the teacher. This was expected because of the traditional, more teacher-centered approach. The second-most frequently observed instructional method occurred in the behavior management category. This may be an indication of lack of student engagement or intrinsic motivation for the activity.

Helping a student with criteria or alternatives for a decision was third in frequency. In the traditional curriculum setting this type of instructional method was recorded more often than in integrated curriculum setting during the observation.

Overall, the atmosphere in class was very friendly. However, the teacher was the leader during the greatest part of the lesson. Students had fewer opportunities to choose or to take responsibility for their choices and actions.

Table 9.

Motivational techniques employed by teachers in a traditional curriculum unit.

Frequency	Category	Example Dialog or Observation
29	General praise	Good job, K. You are so smart!
20	Individualized comments	Good! You are doing terrific with that page! You have been very quiet and helpful, since you put your shoes away, so now you may go and draw a hundred on the blackboard.
3	Teamwork to accomplish tasks	You are so great singers! I love singing with you.
3	Building self esteem and confidence	Many of our first graders were able to spell this difficult word on their own.
1	Goal setting	We try to accomplish as much as possible, but we will not necessary finish the whole book.
0	Directions concerning hands-on involvement	

Table 9 shows motivational techniques used by teachers during the second part of the experiment which was conducted in a traditional curriculum setting. The most frequently observed results were general praise and individualized comments. General praise was used to improve the overall mood of students. Specific praise was used to bring the attention of a student to his/her specific achievements. Teachers still paid attention to students' self esteem issues and tried to help students build an adequate self image by making individualized comments about student strengths.

Table 10.
Questions posed by teachers.

Frequency	Category	Example Dialog or Observations
79	Connection to previous knowledge.	What else makes lines not parallel? Who remembers why did they stop making such bills? How do we know that this bill is not worth a hundred dollars?
53	Asking for student's choices and decisions	What do you think, K., is it a vertex or a line? Why do you think you should be able to do it quickly? L., what's your guess?
18	Checking for understanding of information, directions, requirements, and technique	Can you show the year when the bill was made typed in on the bill? What the "one" in number 13 mean? What were you supposed to do?
10	Guiding self-assessment of product or task	Did any of our questions get answered? What did you do to figure this out again?
9	Behavior management comment or instruction	S., would you use your words please and tell M. what is bothering you? Are you T? So why are you answering if I asked T?
8	Being sure that necessary information is known to accomplish next step	What does it say you should mark on the thermometer? D., what do we go back to?
7	Suggestion	Can you write "healthy food" here? Can you count up here?
6	Assisting in planning to accomplish goal through teamwork	What is the next question? Do you need a spell-check?
2	General question about student's life to build rapport	What is your name?
2	Determining student's attitude toward the task	Will we play math games if we get wild?

During the observation of the traditional curriculum setting, there were no observed directions concerning hands-on involvement. This may be the result of the

traditional curriculum being more oriented toward giving students a theoretical knowledge base.

Table 10 shows questions posed by teachers. The most frequent result consisted of questions connecting new to previous knowledge. This was expected because a traditional curriculum has the transmission of knowledge as one of its main goals. The second most frequent result was asking for the student's choice and decision. Students were often challenged by different kinds of questions, ranging from the simple ones aimed to review facts to questions that teach critical thinking. In the traditional curriculum setting, the teacher plays the part of a leader and mentor, rather than team member. There were no questions intended to make sure all the necessary materials and pieces of equipment were ready. The reason for that may be the general goal of the units. In the integrated curriculum setting, students were making masks which involved a lot of hands-on craft work. During the observation of the traditional curriculum setting students did not have to produce a craft, although manipulatives such as coins were used. However, no questions about materials and equipment were observed. There were quite a few questions intended to check students' understanding of information, directions, requirements, and technique.

Table 11.
Observations of structure of the lessons

Frequency	Category	Example Dialog or Observations
13	Reviewing information learned previously with prompting	Tested knowledge students got about money on previous lessons. Students were asked to write some information about money they already know. Time was limited. Students worked in groups.
12	Demonstration of achievements and knowledge during group presentation to class	Students who wanted to share some information about money shared it. A math competition. Who adds and subtracts numbers faster.
7	Teamwork	Then students wrote down questions they wanted to find answers to. Time was limited. Students worked in groups. Groups of students went from one of four centers to another.
7	Sorting images and information	Studied different figures (hexagon, pentagon, etc.) Found out which figures can't be considered a polygon. Studied the difference between parallel and not parallel lines.
3	praising, rewards, incentive	Game sparkle-math as a reward for a good working during the lesson
2	Planning ahead by making a sketch	Created a table "needs" and "wants"
0	Organizing the work space	

Table 11 shows observations of elements of the lesson structure. The main goal of traditional instruction (transmission of knowledge to students) stipulated that students review information learned previously. Prompting of this review was the most frequent result. Teamwork was also a very important part of the lessons. Students were working as pairs, seated in groups of four. Teamwork also helped

students see the importance of the effort and impact of each student. Much of the lesson was devoted to working with different kinds of information. In integrated and in traditional curriculum settings there was usually a concluding lesson when students demonstrated their achievements and accomplishments. In this case, elementary student spent, in a classroom store, money they had earned during the unit as the conclusion of the topic “money.”

Comparison of Integrated and Traditional Curriculum Units

Tables 12 through 15 compare the observed results from the two different conditions.

Table 12.

Comparison of instructional methods of integrated and traditional curriculum units.

Frequency		Category
1 st Setting Integrated Curriculum	2 nd Setting Traditional Curriculum	
65	20	Suggestion to student to improve technique from the teacher:
48	232	Direct instruction or command from teacher
27	27	Plan of accomplishing the goal briefly reviewed by the teacher
18	27	Helping student with criteria or alternatives for a decision
11	66	Behavior management comment or instruction
7	1	Safety instruction
7	1	Previous knowledge connected to mask work
6	4	Offering help for managing materials, time and space
5	1	Gathering information for next steps
4	0	Example given and direct instruction
4	2	Agreement with student's ideas of technique

Table 12 shows the comparison of the results of observation of instructional methods in the integrated curriculum setting and traditional curriculum setting. The quantity of behavior management comments or instructional cues in the traditional curriculum setting greatly exceeded the number of behavior management comments

or instructional cues in the integrated curriculum setting. However, it is necessary to mention that during the observation of the integrated curriculum setting, the number of preservice teachers in the room somewhat exceeded the number of students. This number of “teachers” watching and guiding may have affected the students’ behavior. During the observation of the traditional curriculum setting there were two teachers and one or two preservice teachers in the room. There were more suggestions to improve technique from preservice teachers in the integrated curriculum setting than comments from teachers in the traditional curriculum setting. In the traditional curriculum setting, teachers used direct instruction and commands more than compared to the integrated curriculum setting. The traditional and integrated curriculum approaches in other categories show comparable results.

Table 13.
Motivational techniques observed. Comparison of two curriculum settings.

Frequency		Category
1 st Setting Integrated Curriculum	2 nd Setting Traditional Curriculum	
75	29	General praise
17	20	Individualized comments
7	3	Building self esteem and confidence
6	1	Goal setting
3	0	Directions concerning hands-on involvement
2	3	Teamwork to accomplish tasks

Table 13 compares observed motivational techniques in the integrated curriculum and traditional curriculum settings. The number of instances of praise in integrated curriculum setting exceeded those of the other condition. However, in the integrated curriculum setting, the amount of general praise was much greater than in the traditional curriculum setting. The larger number of teachers may have influenced

this, but the observer was able to watch only one group of preservice teachers at a time, thereby limiting the number of persons being observed somewhat. Thus according to the observations, teachers in the integrated curriculum setting gave students general praise more often than teachers in the traditional curriculum setting. According to the results of observation students heard individualized comments from teachers in both settings with almost the same frequency. The results for the traditional and integrated curriculum in other categories were very similar.

Table 14.

Questions posed by teachers or preservice teachers. Comparison of two curriculum settings.

Frequency		Category
1 st Setting Integrated Curriculum	2 nd Setting Traditional Curriculum	
81	53	Asking for student's choices and decisions
41	79	Connection to previous knowledge.
16	18	Checking for understanding of information, directions, requirements, and technique
15	0	Making sure the needed materials/equipment are ready
10	10	Guiding self-assessment of product or task
6	6	Assisting in planning to accomplish goal through teamwork
5	2	General question about student's life to build rapport
4	7	Suggestion
4	8	Being sure that necessary information is known to accomplish next step
1	2	Determining student's attitude toward the task
0	9	Behavior management comment or instruction

Table 14 shows the comparison of the results of observation of questions posed by teachers or preservice teachers in the integrated curriculum setting and traditional curriculum setting. Preservice teachers in the integrated curriculum setting asked for students' choices and decisions more often than teachers in the traditional

curriculum setting. That may have happened because the role of the teacher in a traditional curriculum setting is a leader and evaluator, rather than facilitator and a choice provider. In the traditional curriculum setting, teachers made a lot of connections to students' preexisting knowledge. In the integrated curriculum setting preservice teachers made fewer connections to preexisting or previously obtained knowledge. In the traditional curriculum setting, teachers asked questions to manage students' behavior, while in the integrated curriculum setting, preservice teachers did not have to ask questions to manage students' behavior. The results for traditional and integrated curriculum in other categories are largely similar.

Table 15.
Observations of structure of the lessons. Comparison of two curriculum settings.

Frequency		Category
1 st Setting Integrated Curriculum	2 nd Setting Traditional Curriculum	
20	7	Teamwork
12	12	Demonstration of achievements and knowledge during group presentation to class
9	13	Reviewing information learned previously with prompting
9	2	Planning ahead by making a sketch
8	7	Sorting images and information
5	0	Organizing the work space
2	3	praising, rewards, incentive

Table 15 shows the comparison of the results of observation of elements of the lesson structure of the integrated curriculum setting and traditional curriculum setting. Tasks requiring teamwork in the integrated curriculum setting were observed more often than in the traditional curriculum setting. In the integrated curriculum setting, preservice teachers planned ahead with student input more often than in the traditional curriculum setting teachers. In the traditional curriculum setting there were

no observations of organizing the work space by teachers when compared to the integrated curriculum setting. Maybe that happened because there were not a lot of items students were working with during the observation. The results for traditional and integrated curriculum in other categories are very similar.

CHAPTER 5

SUMMARY AND CONCLUSIONS

Summary

The main purpose of this study was to compare lessons in two conditions, both occurring at the primary grade level: (1) subject-integrated lessons of an integrated curriculum unit; and (2) single subject-focused lessons of a traditional separate subject curriculum. Specifically this study sought to answer the following questions:

1. What does implementation of an integrated curriculum unit look like in a primary classroom?
2. What does implementation of a traditional curriculum unit look like in a primary classroom?
3. How are implementation of an integrated curriculum and implementation of a traditional curriculum alike and how are they different?

Characteristics of an Integrated Curriculum in a Primary Classroom

The integrated curriculum unit is a system of activities which are logically connected to help students reach related goals. In this study, the integrated curriculum unit was aimed to help students gain knowledge about Africa, African countries, tribes, culture and history. Students learned about African culture while working on another goal of creating tribal masks. There were a lot of hands-on activities involving teamwork in the unit.

In the integrated curriculum lessons, the role of preservice teachers was to facilitate discussions, offer choices, and guide students in the activities. Most instructional methods observed under this condition were suggestions for students to improve technique. Preservice teachers gave students the opportunity of choice during most lessons. The majority of questions that were asked by preservice teachers were intended to help students make appropriate decisions. Preservice teachers emphasized the importance of collaboration, sharing, and teamwork. Most information was not given directly to students. Instead, students received it through various activities, such as watching a small play or puppet show. Few lessons could be classified as addressing a single subject area; most were integrated lessons containing information or skills from several disciplines. However, all integrated lessons had a stable and logical structure; none were chaotic or free-for-all. The general atmosphere of each lesson was calm and positive with controlled excitement on the part of highly motivated students. Student teachers praised students frequently, encouraging them to produce quality work.

Characteristics of a Traditional Curriculum in a Primary Classroom

The traditional curriculum unit focused on mathematics, however, teachers made verbal connections to other subjects that were related to some parts of the lessons. The structure of the lesson was well-defined and students had opportunities to work with manipulatives. The amount of time students spent working individually and also in review of previous concepts exceeded the amount of time spent in teamwork during the lessons. Teachers provided students with reasons why they needed to learn the presented concept or skill, but students did not have a lot of opportunities to explore on their own. The traditional curriculum setting was very teacher-centered

with the teacher giving directions, providing direct instruction, and making almost all the choices. The amount of direct instruction exceeded the amount of help which was offered to students. Teachers engaged in general praise more often than individualized praise. The questions teachers asked were mostly intended to help students connect their previous knowledge with the new knowledge, rather than facilitating students' choices and decisions as in the integrated curriculum condition.

Comparison of Integrated and Tradition Curricula

In summary, the following comparisons shown in Table 16 indicate the major differences and similarities that emerged from observations of lessons under the two conditions.

Table 16
Summary Comparison of Integrated and Traditional Curricula

Category of Observation	Integrated Curriculum	Traditional Curriculum
Structure of the Lesson	Teamwork	Individual work
Instructional Methods	More suggestions to improve technique	More direct instruction and behavior management
Motivational Techniques	More general praise Same amount of specific individual praise	Less general praise Same amount of specific individual praise
Questions	Centered on student choices	Focused on connections to previous knowledge and behavior management
Role of the Teacher	Provide choices and motivate through praise and ownership. Facilitate teamwork, multidisciplinary inquiry, and improvement of student work.	Provide direct instruction and control behavior, giving praise. Connect new learning to previous knowledge.
Role of the Student	Make choices, decision, and work as a team member.	Follow directions, recall previous knowledge, work individually.

Connecting Findings to Previous Work

Many previous investigators identified characteristics of integrated curricula that were observed in the current study. Wraga (2009) stressed that integrated curricula make learning more meaningful because of personal connections, interdisciplinary connections, complexity, and decision-making. The mask-making activity was personally meaningful because students had the opportunity to express themselves in their choice of mask features. The activities of this unit addressed knowledge from different fields: for example, social studies through African culture, mathematics through patterns and sequencing events or steps, literacy through African folktales, science through African musical instruments and sound production, the arts through mask and stamp-printed garments along with drama. The mask project, and many other projects of this integrated unit, was a multi-step, complex operation that lasted over several class periods. The high frequency of student choice and decision-making of this unit is reflected in the large number of questions about student choices shown in Table 6. Viglione (2009) stated that arts integration affords students with a sense of personal accomplishment. This was certainly evidenced during student presentations of their masks to the whole class as students proudly described the features they had successfully incorporated into their masks and as preservice teachers complimented them on their beautiful products.

Marshall (2005) noted that an integrated curriculum focused on problem-solving needs to involve teamwork. The students and preservice teachers in this study worked as cooperative teams. Preservice teacher communication to students was filled with praise and the opportunity for personal choice, providing a positive, motivating atmosphere in which students took ownership of their work as Trent and Riley (2009)

also observed. Several other studies (Basir et al., 2008; Hockett, 2009; Rule & Barrera, 2008) described the high level of student motivation involved in integrated curricula. Additionally, goal setting, as noted by Virtue et al. (2009) was also a part of preservice teacher- student interactions, as shown in Table 5.

Conclusions

Integrated curriculum and traditional curriculum are very different. The Integrated curriculum emerged as an attempt to make education more student-centered, more appealing to students, and of course to get better outcomes through increased motivation and engagement in learning. Traditional curriculum, in contrast, involves direct transmittal of knowledge and is teacher-centered.

This study showed that the integrated curriculum setting required less teacher energy to be expended during the lesson for behavior management: the amount of questions or remarks related to student discipline was smaller in the integrated curriculum setting, most likely indicating the intrinsic motivation of students. Instructional methods used by teachers in the integrated curriculum setting were mostly student-centered and experiential (students making choices and decisions, planning their work and next steps). In the integrated curriculum setting, students received more positive feedback (general praise) which affected the overall mood in the classroom and promoted student motivation. The integrated curriculum approach offered students a lot of opportunities to own and lead their learning. In the integrated curriculum setting, tasks requiring teamwork were used much more often promoting a collaborative, respectful, atmosphere of shared learning. All of these findings show the positive, enriched, social-emotional atmosphere of this instructional condition. Student motivation, ownership, and individuality were reflected in the process and

product in this condition. The collected research data indicate that this condition was very student-centered.

Different types of activity occur in an integrated versus traditional curriculum setting. Table 17 shows the roles of teachers and students in both settings. A teacher in the integrated curriculum setting focused more on providing multidisciplinary inquiry activities with opportunities for student choice and ownership of learning. This approach is intrinsically motivating to students, requiring less behavior management. Students make choices, decisions, and work as team members. Alternatively, a teacher in a traditional curriculum setting provides direct instruction and expends significant energy controlling student behavior. Students follow directions, recall previous knowledge, and work individually.

How the Results Inform my Personal Practice

The history of education in both Russia and the United States shows that curricular practices evolve and are influenced by political and economic events. My early experiences were solely with traditional curriculum. When I was introduced to the idea of an integrated curriculum, I was excited to learn the possibilities of this approach. Now I have conducted a small study to compare an integrated curriculum with a more traditional way of teaching. The results of my investigation indicate that an integrated curriculum approach is desirable for the following reasons: (1) different disciplines are connected through the teaching/learning process, better mirroring the interconnectedness of problems and projects in the real world and building deeper understanding of the subject matter; (2) this approach develops the student in motivation and responsibility for learning, rather than filling the student with

knowledge; and (3) teachers expend their energy in instruction rather than discipline in this student-centered approach.

I want to share with colleagues through publication, presentations, and personal conversations how employing integrated curricula improves intrinsic motivation of students and the connections they make between disciplines which lead to deeper student learning. Having students who are self-motivated and who take a leadership role in their studies also makes an instructor's task easier and reduces the amount of behavior management needed. Motivation keeps students focused on the task and therefore helps with the discipline on the lesson. Leadership requires responsibility. When students are leaders of the learning process, they tend to behave more responsibly and take ownership of their studying.

In practice in my own elementary classroom, or as an education professor in a future college classroom, I want to employ all the beneficial strategies of the integrated curriculum setting. Especially, I want to use inquiry based learning because the knowledge and skills acquired through problem-solving investigations are long lasting and solid.

Recommendations

Integrated curricula have many advantages over traditional single-subject curricula, particularly a student-centered focus that results in greater motivation, ownership, and teamwork, along with deeper connections from the studied topic to other subject areas and the real world through the inquiry or problem-solving approach. Therefore, I recommend that schools implement integrated curricula.

Previous studies have identified factors that do and do not support this approach in schools. Wallace et al. (2007) noted that the wider community, school

administrators, and teachers themselves must have a collective vision of the integrated curriculum for it to be successfully implemented. Park (2008) noted that traditional teachers often resist implementation of an integrated curriculum because of work load, lack of resources, or self-image as a teacher of a specific subject. The preservice teachers in the current study resisted the project initially because it was very different from their own traditional elementary school experiences. However, most recognized the value of the project as it unfolded and as they witnessed the high degree of student engagement and learning. Preservice teachers in the current project were at first overwhelmed with the complexity of the tasks of learning about an unfamiliar African culture and producing a three-dimensional authentic mask. Scaffolding and approaching tasks in a step-by-step fashion made these activities manageable. Therefore, it is important for teachers to be well-supported when they attempt to implement an integrated curriculum for the first time. Park (2008) discussed the problem of teachers trying to implement an integrated curriculum without fully understanding the theoretical framework for such a curriculum. This indicates that teacher preparation that includes the theory behind the practice is necessary for success.

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APPENDIX

OBSERVATION TEMPLATE

Date _____ Time _____

Lesson content focus:

Structure of the lesson:

Instructional Methods:

Motivational techniques:

Questions posed by teachers: