

**Instructional Technology, Motivation, Attitudes and Behaviors:
An Investigation of At-Risk Learners in the Middle School General
Music Classroom**

by

Sharon A. Clark

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Instructional Technology, Motivation, Attitudes and Behaviors:
An Investigation of At-Risk Learners in the Middle School General Music Classroom

by
Sharon A. Clark
Cluster 15

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EdD Program in Instructional Technology
and Distance Education
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for the Degree of Doctor of Education

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2003

Approval Page

This applied dissertation was submitted by Sharon A. Clark under the direction of the persons listed below. It was submitted to the EdD Program in Instructional Technology and Distance Education and approved in partial fulfillment of the requirements for the degree of Doctor of Education at Nova Southeastern University.

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Abstract

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In middle schools today, teachers meet many challenges. Students come to school with a wide variety of experiences and economic backgrounds. They come with varying needs and abilities. Middle school is a time of many changes for students. One of the many goals of middle school is to meet the needs of the students in academics as well as the social, physical and emotional needs.

The research question addressed in this dissertation was: What are the effects of instructional technology on motivation, attitudes and behavior of at-risk learners in the middle school general music classroom? The purpose of this study was to determine if the implementation of instructional technology, specifically digital piano keyboards and computers, in the middle school general music program would have a positive effect on the motivation, attitudes and behaviors of at-risk learners. To this end, a study was conducted in which at-risk learners received instruction delivered through a higher concentration of technology.

Students completed a pretest and a posttest consisting of the Motivation Achievement Profile, audiation/listening and audiation/reading scales of Level One of the Iowa Tests of Music Literacy and the Middle School Music Attitude Scale. The experimental group received music instruction through a higher concentration of technology while the comparison group participated in an equally desirable music program.

The expected results were that the use of instructional technology would improve motivation, attitudes, and behavior as well as basic music skills in the general music classroom. In addition, through the positive experience they will have, in conjunction with the use of the technology, their attitudes and behaviors such as attendance, attention to task, and persistence in performing certain tasks will improve.

Data was analyzed using an analysis of covariance, in which the posttest mean of the experimental group was compared with the posttest mean of the comparison group with the pretest scores used as a covariate. Overall, no statistical significance was found; however, statistical significance was found on 2 of the 22 measures taken. Furthermore, there was a remarkable degree of consistency for the experimental group. Overall, consistency was seen with the experimental group scoring higher on 18 of the 22 measures indicating that perhaps if there had been more students a significant effect might have been seen. Nonetheless, the consistency leads to the conclusion that the treatment had some kind of effect. There is an implication that a positive, although not statistically significant effect on the motivation, attitudes and behaviors of at-risk learners occurred.

Table of Contents

	Page
Chapter I: Introduction.....	1
Middle School Ideals and Philosophies	1
Problem Context	3
Statement of Purpose and Rationale	6
Objectives	8
Benefits of the Research	8
Limitations of the Study.....	9
Definition of Terms.....	9
Summary	10
Chapter II: Review of the Literature	12
Introduction to the Literature	12
Research on At-Risk Learners	12
Instructional Technology and Music	21
Motivation to Learn	31
Keller’s ARCS Model of Motivational Design	34
Summary	36
Chapter III: Method.....	38
Introduction.....	38
Research Methods and Procedures	38
Format for Presenting Results.....	41
Instruments Used for the Data Collection.....	41
Resource Requirements	44
Timeline	45
Summary	46
Chapter IV: Results.....	48
Procedure	48
Analysis.....	52
Analysis of the Achievement Motivation Profile	54
Analysis of the Iowa Test of Music Literacy.....	60
Analysis of the Middle School Music Attitude Scale.....	63
Findings.....	64
Summary.....	66
Chapter V: Discussion of Results	67
Results of the Achievement Motivation Profile.....	68
Results of the Iowa Test of Music Literacy	71
Results of the Middle School Music Attitude Scale	73
Conclusions.....	75
Implications.....	76
Recommendations.....	77
Summary	78

References.....	80
Appendixes	
A Opportunity to Learn Standards for MusicTechnology	85
B The National Standards in Music Grades 5 - 8	91
C Observation Protocol	97
D Informed Consent Agreement for Student Participation	99
E Middle School Music Attitude Scale	102
Tables	
1 Definition of Terms.....	10
2 Timeline	46
3 Achievement Motivation Profile Response Styles	56
4 Achievement Motivation Profile Motivation for Achievement Scales....	57
5 Achievement Motivation Profile Inner Resources Scales	58
6 Achievement Motivation Profile Interpersonal Strengths Scales	59
7 Achievement Motivation Profile Work Habits Scales.....	60
8 Iowa Test of Music Literacy Rhythmic Concepts Scales	61
9 Iowa Test of Music Literacy Tonal Concepts Scales.....	62
10 Middle School Music Attitude Scale	63

Chapter I: Introduction

Middle School Ideals and Philosophies

The overarching purpose of all schooling in our society is to help students become good citizens, lifelong learners, and healthy, caring ethical, and intellectually reflective individuals. The skills, knowledge, and personal competence that students acquire in school should enable them to be successful now and in the future (National Middle School Association, 1995).

Contemporary society presents remarkably different challenges from those that educators faced a few decades ago. While the traditional school functions of transmitting our heritage, teaching the tools of scholarship and the workplace and promoting democratic citizenship remain valid, many practices of the past are no longer appropriate for the youth of today or the society in which they live. Educators therefore seek to provide schools that are joyful places where learning and learners are celebrated (National Middle School Association, 1995).

In middle schools today, teachers meet many challenges. Students come to school with a wide variety of experiences and economic backgrounds. They come with varying needs and abilities. Middle school is a time of many changes for students. One of the many goals of middle school is to meet the needs of the students in academics as well as the social, physical and emotional needs. “If we are serious about educating every child we must venture to absorb every child in meaningful, engaged learning” (Muir, 2000).

Muir (2000) states that during the middle school years, students strive for independence and begin a shift from pleasing adults toward pleasing their peers. During these middle years, students’ academic patterns and attitudes toward school

begin to solidify based on their perceptions of the merit of the work, rather than on the basis of a request of a significant adult. Reaching young adolescents while they are forming their patterns and attitudes and while they are striving for independence can help instill habits supportive of self-regulated learning. *Turning Points: Preparing American Youth for the 21st Century* (Carnegie Task Force on Education of Young Adolescents, 1989) recognizes that early adolescence may be the “last best chance” to positively influence the paths young adolescents take in their development.

The *Turning Points 2000* design to improve middle school education consists of seven recommendations. The overall goal is to ensure success for every student. The seven recommendations are: (a) teach a curriculum grounded in standards, relevant to adolescents’ concerns and based on how students learn best and use a mix of assessment methods, (b) use instructional methods that prepare all students to achieve high standards, (c) organize relationships for learning, (d) govern democratically, involving all school staff members, (e) staff middle schools with teachers who are experts at teaching young adolescents and engaged in ongoing professional development, (f) provide a safe and healthy school environment and (g) involve parents and communities in supporting student learning and healthy development. (Jackson & Davis, 2000)

The National Middle School Association has offered recommendations to middle schools. In their position paper *This We Believe* (1995), developmentally responsive middle schools are characterized by: (a) educators committed to young adolescents, (b) a shared vision, (c) high expectations for all, (d) an adult advocate for every student, (e) family and community partnerships and (f) a positive school climate. In addition, Developmentally Responsive Middle Level Schools provide: (a) curriculum that is challenging, integrative and exploratory, (b) varied teaching and learning

approaches, (c) assessment and evaluation that promote learning, (d) flexible organizational structures, (e) programs and policies that foster health, wellness and safety and (f) comprehensive guidance and support services.

In June 1997, a diverse group of foundations, associations and middle-grades researchers met to seek a collaborative agenda that would focus exclusively on raising the achievement of all students in the middle grades. The National Forum to Accelerate Middle-Grades Reform has become an influential voice in middle-grades policy. The National Forum envisions high-performing schools that are academically rigorous, developmentally responsive and socially equitable (Norton, J. & Lewis, A., 2000). According to Lewis, schools need to become learning communities. To make a school into a learning community, teachers need a school environment in which: (a) the principal knows how to unify the personal and professional cultures of the school, (b) the principal knows how to focus on learning, not teaching, (c) teachers have sufficient peer support and (d) the school and the district are in synch (Norton, J., Lewis, A. 2000).

According to Muir (2000), the National Middle School Association (1995), and the Turning Points 2000: Educating Adolescents in the 21st Century (2000), what grew from the middle school movement are the organizational and structural changes that we now come to expect in middle level schools: interdisciplinary teaming, looping, multiyear teams, advisory programs, and exploratory or allied arts programs, integrative curriculum, project based and field-based learning and alternative assessment.

Problem Context

The middle school, which was the subject of this study, is located in the Northeast region of the United States and opened in 1992. It was built to replace a

junior high school, which had been in existence for over 113 years. It is one of nine middle schools in a district that serves a student population of approximately 16, 500 students. The school, as well as the district, is in an urban setting surrounded by a variety of suburban, more affluent communities with less ethnically diverse student populations.

The mission of this particular middle school is to prepare students to think creatively, inquiringly and critically while using the latest tools in educational theory and technology. The student population consisted of predominantly Southeast Asian students (54%) followed by a small Hispanic and African American population. The remaining student population was Caucasian. Although many of the bilingual students had been mainstreamed, approximately 25% of the students participated in the bilingual program. Approximately 61% of the students received free or reduced lunch. In addition, this urban middle school used the inclusionary model for the delivery of Special Education services to approximately 22% of the students. There were a total of 50 teaching professionals on staff. There were two paraprofessionals on each academic team as well as two paraprofessionals for students whose individual education plans called for constant one-on-one support.

Historically, the attendance rate for this school as a junior high school was low. In 1986, the daily attendance rate was 84.2%. By 1999, as a middle school, the daily attendance rate was 94.2%, which was not only the highest in the city but higher than the state average. By the 1999-2000 school year, this urban middle school was one of the top three out of nine middle schools in the district on every standardized test. It reached this level consistently since the 1992 school year. The positive outcomes due to the change from junior high school to middle school continued to evolve and emerge.

Meeting the needs of at-risk learners in an urban middle school is a difficult challenge at best. Baas, (1991), Donnelly (1987), Taylor, Barry, and Walls (1997) and Johnson, (1998) stated that although there does not appear to be one clear absolute definition of at-risk children, there are characteristics that are frequently present among children determined to be at-risk. At-risk learners include students with one or more of the following risk factors: (a) low socioeconomic status, (b) language and cultural differences, (c) dysfunctional family situations, (d) residence in disadvantaged communities, (e) health care and safety needs not being met, (f) low school performance, (g) poor attendance records and (h) negative involvement with the law.

In addition, in an article titled Making Schools More Responsive to At-Risk Students, (Pallas, 1989), students are considered at-risk if they: have been exposed to inadequate or inappropriate educational experiences in their family, community or school, they live in poverty, their family composition is that of a single parent family, or there is limited English or no English spoken in the home. Another key factor is the educational background of the mother. Highly educated mothers provide children with more educational resources than less educated mothers (Pallas, 1989).

In today's world, technology surrounds us and has become an almost indispensable and often invisible aspect of our lives (Moore, 1994). Mash (1991), Assistant Dean of Curriculum for Academic Technology at Berkeley College of Music, states that technology has created new opportunities in the field of music and that we, as music educators must prepare students to interact with and utilize these tools.

Integrating the use of technology in the middle school general music curriculum

can assist in meeting the needs of at-risk learners. Some of these needs include: more structured learning environments, individualized learning tasks, balancing direct instruction with challenging activities, teaching learning strategies, establishing an experiential base for learning, teaching self-monitoring and self-management and focusing on meaningful skills, concepts and activities (Johnson, 1998).

The technological revolution in music is here whether music educators and school administrators approve of it or not and whether they welcome it or not (Fabregas, 1992). Technology does not provide an all-encompassing solution, but in combination with other traditional music instruction techniques, adds a new and exciting dimension to musical thinking and learning (Whitmore, 1996).

Making the classroom a place that naturally motivates students to learn is much easier when students and teachers function in an atmosphere where academic success and the motivation to learn are expected and rewarded. Such an atmosphere, especially when motivation to learn evolves into academic achievement, is a chief characteristic of an effective school (Renchler, 1992). Developing life-long learners who are intrinsically motivated, display intellectual curiosity, find learning enjoyable and continue seeking knowledge after their formal instruction has ended has always been a major goal of education (Small, 1997).

As children grow, their desire to learn seems to lessen. Learning becomes tedious instead of enjoyable. A large number of students – more than one in four— leave school before graduating (Lumsden, 1994). Many students that remain in school do not invest themselves completely in the learning process. Awareness of how students' attitudes and beliefs about learning develop and what facilitates learning for its own sake can assist educators in reducing student apathy (Lumsden, 1994).

The highest concentrations of at-risk children are in urban centers and rural areas (Pallas, 1989). Due to this high concentration of at-risk students in urban school districts, administrators and educators must come up with alternate instructional strategies to meet the needs of these students.

Statement of Purpose and Rationale

The framework for this study was developed around three related areas of research. The first was the use of instructional technology in the general music classroom. The second was the importance of meeting the needs of at-risk learners. The third area concerned the motivation of students.

The purpose of this study was to determine if the implementation of instructional technology, specifically digital piano keyboards and computers, in the middle school general music program would have a positive effect on the motivation, attitude and behaviors of at-risk learners. To this end, a study was conducted in which at-risk learners received instruction that was delivered through a higher concentration of technology. The expected results were that the use of instructional technology would improve motivation, attitude, behaviors as well as basic music skills in the general music classroom. In addition, through the positive experience they had in conjunction with the use of the technology, students' attitudes and behaviors such as attendance, attention to task, persistence in performing certain tasks would improve. The comparison group would participate in an equally desirable but different treatment than the experimental group. The comparison group participated in music instruction delivered through the Orff approach. The philosophy of Orff is to teach the total child through singing, playing, creating and moving.

Performance characteristics related to Maher and Braskamp's theory of personal

investment (1986) would also be observed. These five observable behavioral patterns, direction of attention (choice), level of activity (intensity), persistence, continuing motivation and performance were used to determine how students invest themselves in an activity. If the study proved to be successful within the music program, the program may be adapted and implemented in other areas of the curriculum to more effectively meet the diverse needs of the student population, particularly at-risk learners.

The students attended music class once a week for seventy minutes. All students in the school were required to take music class as part of the middle school curriculum. The current music program was not effectively meeting the needs of the at-risk learners. This assessment was made based on informal classroom observations of student behavior, demonstration of skills as well as interviews with the guidance counselor, school psychologist and the adjustment class teacher.

Objectives

The objective of this research was to determine the effect of instructional technology on motivation, attitude and behavior of at-risk learners. Through the use of a higher concentration of technology, the researcher expected to achieve positive growth and improvement in motivation, attitude and behavior of at-risk learners as well as improvement in basic music skills. These objectives, improvement in motivation, attitude and behavior, performance of music skills and general behavior which included attendance, arriving to class on time, time on task and completion of the tasks, were measured through a variety of instruments. The Achievement Motivation Profile assessed the students' motivation to achieve, along with related personality characteristics, interpersonal attributes, work style, and other qualities important for school success. The Iowa Tests of Music Literacy was used to assess basic music

achievement. The final instrument, the Middle School Music Attitude Scale measured students' global attitudes towards music classes.

Benefits of the Research

The benefits to the participants were improvement in motivation, attitude and behavior in the general music classroom. In addition, the students also benefited from improved music skills as well as basic computer skills. The school benefited from this research in determining if this model should be replicated in other areas of the curriculum, thereby, more effectively meeting the needs of at-risk students. This research served as another example of effective differentiated instruction. The doctoral student benefited from this research because it answered an important question that middle schools educators face; meeting the needs of at-risk students. If the research provided some insight, other educators within the school, the district or within the field of music education would have another instructional strategy for helping at-risk students succeed.

Limitations of the Study

There were a number of limitations that impacted the generalizability of this study. First, this study was conducted in an urban middle school that had an ethnically diverse student population. The study was limited to one grade level, grade seven. In addition, the time frame of the study was approximately half the school year. Finally, all of the students had participated in general music classes that implement technology and might have already reaped the benefits of those classroom experiences.

Definition of Terms

Although relatively little has been written on the integration and implementation of technology-based teaching tools in the middle school general music classroom,

technology is a pervasive force in education and digital piano keyboard technology and computers have been successfully integrated into middle school general music education. Because instructional technology and music is a relatively new field of study, the terminology is often not well defined. The following definitions and classifications are provided for the purposes of this paper (see Table 1).

Table 1

Definition of Terms

Term	Definition
AMP	Achievement Motivation Profile
ARCS	Attention; Relevance; Confidence; Satisfaction Keller's Model of Motivational Design
CD	Compact Disc
CREDE	The Center for Research on Education, Diversity and Excellence
HROs	High Reliability Organizations
Orff	Music methodology developing the complete musicality of the child through singing, playing, moving, and creating
MENC	Music Educators National Conference
MIDI	Musical Instrument Digital Interface
TIME	Technology Institute for Music Educators

Summary

Music teachers are in a unique position to reach out to students at-risk. Music and the arts offer students an intellectually and emotionally nurturing environment that allows them to express themselves. This environment may not be available in other

classes. By being aware of who is at-risk and adopting some of the successful strategies used in at-risk intervention programs, music educators could help these students. At-risk students could be successful in music and contribute to the music-learning experiences of other students. A taste of success might motivate students to succeed in other areas and even stay in school (Taylor et al, 1997).

Chapter II: Review of the Literature

Introduction to the Literature

The purpose of this literature review was to discuss in-depth the needs of at-risk students and how schools can and must meet these challenging needs. The theoretical framework for this study was a triangulation of research on at-risk students, instructional technology in the middle school general music classroom and motivation theory.

In today's world, technology surrounds us and has become an almost indispensable and often invisible aspect of our lives (Moore, 1994). The use of technology has swept across our modern society (Rudolph et al, 1997). Electronic devices from compact discs, to digital piano keyboards abound. In addition to discussing the literature on at-risk students, the purpose of this literature review was to examine various research studies that have been conducted that integrate computers and digital keyboards in the middle school general music curriculum.

The researcher explored motivation, with regards to the use of instructional technology in the final portion of the literature review. Few educators would argue with the premise that student motivation is an important influence on learning (Anderman et al, 1998). Although it is difficult to prescribe a “one size fits all” approach to motivating students, research suggested that some general patterns do appear to hold true for a wide range of students (Anderman, et al,1998). Keller’s ARCS Model and Attribution Theory are two of the many studies on motivation.

Research on At-Risk Learners

In 1983, the National Commission on Excellence in Education released a report titled “A Nation At Risk”. According to this report, “the educational foundations of our

society are presently being eroded by a rising tide of mediocrity that threatens our very future as a Nation and a people” (National Commission on Excellence, 1983, p.5). This report also cautioned that U.S. students were at risk of developing lower skill levels than their counterparts and future trade competitors in other countries. These students must be educated or the economic competitiveness of our nation will be undermined (Shuler, 1991).

Since the National Commission on Excellence report, many organizations including the U.S. Department of Education, the Music Educators National Conference and Phi Delta Kappan have conducted research on sustaining successful innovations in American education. In *Educational Reforms and Students At-Risk: A Review of the Current State of the Art* (1994), it stated:

Most poorly educated young people do not become lifelong welfare recipients or career criminals. Too many of them labor long hours at dead-end jobs for wages that fail to raise their families out of poverty; they enroll in store-front vocational “colleges” that immerse them in debt and fail to prepare them for promised career opportunities; they struggle to read the employment application or the letter from their child’s teacher that demands more literacy skills than they possess; they die at earlier ages from illnesses and diseases related to poverty (Rossi, R., and Montgomery, A.1994).

Historically, student diversity has always been an enduring characteristic of the American Educational system. There have always been regional and socioeconomic differences as well as cultural and linguistic differences (Rossi and Montgomery, 1994). Immigrant children were predominantly from impoverished and poorly educated parents. They came to America fleeing intense poverty or persecution in their homelands, knew little English and were resented by the dominant society (Rossi and Montgomery, 1994). Throughout much of U. S. History, stated Rossi and Montgomery, the separate and unequal schooling of diverse student groups had been reinforced by social mores, justified by pseudo-science, and, in many cases mandated by law (Rossi

and Montgomery, 1994).

Reform initiatives of the last decade required educators to re-think America's traditional school model where all students were required to absorb the same information in the same way. If average and above average students can then be offered a greater chance of success with improved educational plans, then their at-risk peers must also be offered the benefits of available research-based educational improvements to reduce the risk and help them face the future (Day, 2000). If schools were interested in producing lasting positive effects for students at-risk, they needed to develop comprehensive reform strategies that influenced students' opportunities and motivation to learn (Rossi and Montgomery, 1994). In addition, Rossi and Montgomery (1994) stated that to affect opportunities and motivations, a comprehensive strategy must promote academic success, relevance of the school program, positive relations within school and supportive conditions beyond school.

In addition to rethinking the traditional American school model, some researchers, (Pine and Hillard, as cited in Rossi and Montgomery, 1994), suggested that school policies, practices and curricula must prepare students to live in a culturally diverse society. Traditionally, being at-risk included: (a) low socioeconomic status, language and cultural differences, (b) dysfunctional family situations, (c) residence in disadvantaged communities, (d) health care and safety needs not being met, (e) low school performance, poor attendance records, and (f) negative involvement with the law, (Baas, 1991; Donnelly, 1987; Taylor, Barry, & Walls 1997; and Johnson, 1998). Some researchers suggested expanding those characteristics to include those lacking good character development. Pleasant productive young workers who understand 21st century technologies but failed to grasp the significance of social and ethical issues may

also place themselves, their communities and the nation at risk (Rossi and Montgomery, 1994).

In order to educate those U.S. students who are now deemed “at-risk” and to achieve the educational accomplishments that were already being experienced by many students, an increase in the reliability of schooling for U. S. children is needed. We would need to create school systems that exhibit an absolute avoidance of school failure (Stringfield, 1994). In addition, if we are to address the needs of all children at risk, whole systems must work with levels of reliability that surpass the U. S. experience to date (Stringfield, 1994).

Many schools and school districts have reconfigured their academic offerings to provide the extra boost that at-risk students need to improve their chances for academic success. Two broad, overarching conditions were typically present in schools that successfully serve at-risk students. First, these schools functioned as caring, cohesive communities. Second, they operated under standards similar to high-reliability organizations (Irmsher, 1997).

High reliability organizations require clarity of goals. In areas deemed critical to the public interest (e.g. air traffic control), organizational structures have evolved to meet the requirements of virtual 100 percent reliability. High-reliability organizations (HRO’s) provide whatever level of support is deemed necessary to achieve a goal of 100 percent failure-free operation. High reliability organizations develop standard operating procedures, train staff, coordinate activities, and monitor performance with the utmost care (Rossi and Montgomery, 1994).

In order for schools to function as HROs, the literature suggested several changes would need to occur. Schools would need to establish clear goals as well as

create and clarify standard operating procedures regarding curriculum and instruction. In addition, they would need to increase goal directed staff development as well as open access to rule making. Finally, schools would need to improve two-way staff evaluation procedures and practices as well as create more flexibility in dealing with situations (Stringfield, 1994).

In addition to being a high reliability organization schools needed to be first and foremost caring communities. The elements that make a school a caring community include the following: (a) shared vision, (b) participation, (c) shared sense of purpose, (d) caring, (e) shared values, (f) trust, (g) incorporation of diversity, (h) teamwork, (i) communication, (j) respect and (k) recognition (Irmsher, 1997).

In addition to defining the at-risk learner, various strategies for improving their opportunities for success were mentioned in the literature. The Center for Research on Education, Diversity and Excellence (CREDE) compiled a list of core findings that transcend specific ethnic groups, localities, urban or rural schools, and risk factors such as socioeconomic (Tharp, 1997). CREDE determined that there were five principles that could help the diverse student populations across the country, including those at risk of educational failure, to achieve high standards. The five principles were: (a) facilitate learning through joint productive activity among teacher and students, (b) develop students' competence in the language and literacy of instruction throughout all instructional activities, (c) contextualize teaching and curriculum in the experiences and skills of home and community, (d) challenge students toward cognitive complexity and (e) engage students through dialogue, especially the instructional conversation. These principles could be used as an organizing structure for both continuing research and immediate implementation into programs for at-risk students (Tharp, 1997).

Similar to the principles that CREDE determined would assist all students to achieve high standards, Johnson (1998) identified twenty principles of instruction that were known to be educationally effective and necessary in the promotion of school success for at-risk students. These principles included: (a) maintain high expectations, (b) make use of praise and minimize criticism, (c) capitalize on learning technologies, (d) balance direct instruction with challenging activities, (e) teach learning strategies, (f) accommodate student learning style, (g) establish an experiential base for learning, (h) teach vocabulary directly, (i) focus on meaningful skills, concepts and activities, (j) use examples and demonstrations, (k) actively involve students, (l) encourage cooperative learning, (m) ask and encourage questions, (n) teach self-monitoring and self-management, (o) provide creative opportunities for practice and review, (p) integrate skills and concepts throughout the curriculum, (q) build student interest and enthusiasm, (r) manage the instructional process efficiently, (s) celebrate cultural diversity in the classroom and (t) facilitate personal involvement with school (Johnson, 1998).

In *Education Reforms and Students at-Risk: A Review of the Current State of Art*, young people needed to have adults who were ‘crazy’ about them. Unfortunately, this was not always the case. Some students felt that nobody at school cared about them and the teachers felt unsupported, and lacked the resources to adequately do their job. There were numerous factors that enhanced the school environment. Factors included effective principal leadership, a safe and orderly setting, engaging extracurricular activities, reductions in the size and impersonality of schools and educational programs designed to fit the unique needs of students (Rossi and Montgomery, 1994).

Throughout the research there was an underlying theme that was consistently present. There needed to be integrated strategies that addressed all aspects of students’