EXAMINING THE EFFECTS OF YEAR-ROUND EDUCATION A Literature Review

by

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ABSTRACT

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Year-Round Education (YRE) has been a largely debated topic in recent years. The literature reveals varied results pertaining to the effects of year-round programs, including its promise in alleviating summer learning loss. Some research proposes that summer learning loss is a real phenomenon, while others purport that it simply doesn't exist. Nonetheless, an increasing number of school districts are implementing forms of year-round schooling and reporting positive academic results. Further, many argue YRE's logistic and financial benefits. Nonetheless, continued research on YRE, using growth sensitive measures, is essential to lead future educational practice.

Table of Contents

CHAPTER ONE

Introduction

Since the mid 1960's, Year-Round Education has been a largely debated alternative to a traditional academic calendar. Implementation of Year-Round Education (YRE) has increased more than five hundred percent since 1988, and the number of students currently enrolled in year-round schools exceeds two million (National Association of Year-Round Education, 2002). This clearly illustrates a rapid growing interest in year-round schooling. Despite this growing interest, a vast majority of school districts continue to remain true to a traditional calendar that upholds a long summer break, partially because the pros and cons of implementing a YRE program are not common knowledge.

Limited empirical research of YRE has produced mixed results. Proponents of YRE contend that our widely used traditional educational schedule was organized during an agricultural era when families needed their children to work on the family farm (Ballinger, 1995). Today, as our society has become more urbanized, our educational calendar may need reconstructive attention. Some (Ballinger et al, 1987; Cooper et al, 1996; Kerry & Davies, 1998) contest that a traditional school calendar is detrimental to students' academic achievement due to "summer learning loss" (the hypothesis that students forget previously learned information during long summer breaks, causing a regression in academic performance). This claim further suggests that shorter, more frequent breaks would allow students to retain information from the previous session and would decrease the time spent reviewing material (Ballinger, 1987; Opheim & Mohajer, 1995). The theoretical concept of summer learning loss, however, is heavily disputed in

the literature (Wintre, 1986; Zykowski, 1991). Likewise, Naylor (1995) asserts some research conducted on student achievement loss during break has produced mixed or insignificant results. Opponents or YRE suggest if no academic benefits are plausible, making the change to a year-round program is not worth the risk of causing disruption and adjustment problems. They also state that children learn continuously, whether they are in school or not. This refutes the philosophical proposal by Glines (1998) that learning is a 12-month process that shouldn't be obstructed by 9-month schooling. Others claim the type of learning that occurs during school breaks is simply a different kind of necessary learning (REB Communications and Publishing Inc, 2001). However, most literature and media sustaining this position lack empirical support.

Proponents of YRE also emphasize the cost-effectiveness and practical benefits of YRE with regard to administrative duties, teacher salaries and overcrowding. Year-round calendars have the potential to accommodate more students, reduce financial strain, and increase teacher salaries and other needed services. These contentions have been the principle rationales for YRE, and they have received some support from the research. Allinder (1995) contends that a school can accommodate an additional one third, or more, of its student population when implementing a year-round calendar with a multi-track method where students are on different attendance schedules. Research by Gandara and Fish (1994) observed this occurrence in a California district adopting YRE as part of its educational reform.

The purpose of this paper is to review what is currently known about Year-Round Education and to explore the effects it has on student achievement, schools and communities. These two questions will guide this literature review:

1. What is Year-Round Education?

2. What are the Effects of Year-Round Education?

The first portion of this paper will define Year-Round Education. This section will explore YRE's historical background and place of origin, and then discuss the different systems of YRE applied today. The effects of YRE will be discussed in the second portion of the paper. An investigation of the research on summer learning loss and how YRE influences student achievement, school budgets, and other social concerns will be addressed. The paper will conclude by discussing implications for practice and recommendations for further research in the area of YRE.

Definition of Terms

Curriculum-based measurement – "… set of standard simple, short-duration fluency measures of reading, spelling, written expression, and mathematics computation … that measure vital signs of student achievement in important areas of basic skills or literacy" (Shinn, 1998, p. 1).

Correct digits – A curriculum-based measurement of math scored by counting the number of correct responses to mathematical computation problems.

Letter-word sequence – A curriculum-based measurement of written expression recorded by the number of correctly spelled, two word sequences.

Multi-track attendance schedule – A characteristic of YRE where students and teachers are assigned to groups and each group attends school by a different schedule. This scheduling method can accommodate greater numbers of students.

School year extension – Lengthening the school year to include more instructional days and a shorter summer break.

Single-track attendance schedule – All students and teachers attend school simultaneously.

Summer learning loss – The amount of previously learned information that students forget during the summer break.

Traditional educational calendar – The commonly used 180, six-hour day calendar characterized by a long summer break (usually about 3 months).

CHAPTER TWO

Literature Review

History and Origination of Year-Round Education

The notion of Year-Round Education (YRE) in the United States dates back to 1645 when the town of Dorchester, Massachusetts mandated that the schoolmaster maintain school hours from 7am to 5pm daily for eight months of the year. During the other four months, September through December, class hours were decreased to 8am to 4pm (Zykowski et al, 1991), apparently for harvest season. This historical information implies that YRE is not a new phenomenon. In the 1800's, immigrants from Europe advocated for year-round schooling to facilitate the learning of the English language and to integrate their children to the American culture.

According to Zykowski et al. (1991), summer education opportunities were prevalent in the late nineteenth and early twentieth centuries in the United States. The Commissioner of Education advocated for "summer school" in 1888 to focus on technical and vocational training. Among the cities adopting the nearly 260-day, year-round schedules were Detroit, Cleveland and Buffalo, New York. In 1904, Bluffton, Indiana became the first city to implement a YRE program with intentions to increase student achievement, overcome shortage of space, and minimize learning loss (Kasnic, 1999; Palmer & Bemis, 1999; Zykowski et al. 1991).

The concept of YRE quickly evolved as school districts across the country began employing it for varying reasons (Zykowski et al. 1991). In 1912, Newark, New Jersey, used year-round schools to teach English to immigrant students. In 1917, Minot, North Dakota held summer classes attempting to reach wayward youth. Omaha, Nebraska

operated year-round vocational training in 1925, and Nashville, Tennessee initiated a form of YRE in 1926 to improve the overall quality of education. Finally, to better utilize physical space, Aliquippa, Pennsylvania commenced summer programs in 1928 (Zykowski et al, 1991). These pioneering districts adopted forms of YRE to fulfill many of the same needs facing today's school districts: over-population, academic regression, financial struggles, etc.

By the onset of World War II, schools assumed a more common, nine-month calendar consisting of 180, 6-hour days. This allowed students to work in the fields, with teachers assisting where needed (Kasnic, 1999). The National Education Association stated this was a compromise between the short rural school years and year-round urban education (Zykowski et al, 1991).

Zykowski et al. (1991) asserts that an amplified interest in education was apparent in the mid 20th century, and YRE took a back seat to large school construction to accommodate population growth following WWII. However, in 1964, the Education Commissioner of Virginia, James E. Allen, created a surge toward redesigning the school calendar. From 1968-1972, Allen's direction and inspiration led to the development of single-track and multi-track YRE programs still used today.

Hayward, California launched California's first year-round school in 1968 (Zykowski et al, 1991). This marked the beginning of the modern era of YRE and mounted a rapid escalation in the number of schools converting to a year-round calendar. Today, California leads the nation in the number of participating YRE schools with 1,455 (Ballinger, 1998).

The early 1970's manifested a growth of YRE. However, by the decade's end, sparked by a lull in population growth and pressure for uniformity, many schools reverted back to a traditional calendar. Interestingly, according to Zykowski et al. (1991), none of the schools cited poor educational achievement as a motivator for abandoning its year-round program.

The 1980's saw rejuvenation of YRE throughout the country, and the 1990's experienced record growth in its implementation. Today, forty-four states utilize YRE, including nearly 560 school districts and more than 3000 schools (www.nayre.org/statistics, 2001).

Current Practices in Year-Round Education

It is necessary to be familiar with some basic concepts of YRE to fully understand its effects. Initially, it is important to know the characteristics of a "traditional educational calendar." Two semesters, one in the fall and one in the spring, and an extended summer break of approximately 12 weeks characterize a traditional school calendar. All students attend school simultaneously. In contrast, there are two types of YRE. The first, and least common, is "extension," often called "school extension" or "extension of the school year." School-year extension generally means increasing the number of school days in the school calendar to between 220 and 240. Most schools do not opt for school extension because the number of school days is added stress for students (Opheim & Mohajer, 1995).

The second type, and most common implementation of YRE, involves restructuring the current traditional calendar to include more frequent, shorter breaks throughout the school year (Opheim & Mohajer, 1995). Using this method, the number

of school days can remain the same or be slightly increased if desired. Both types of YRE schedules decrease the length of summer break.

According to Opheim & Mohajer (1995), a YRE schedule may take on many forms. Each form is categorized by the number of school days followed by the number of days students are on break. For instance, a 45/15 schedule means that students and teachers are in school for forty-five days and then on break for fifteen days. The most common schedules include 90/30, 60/20, and 45/15.

According to Palmer and Bemis (1999), most YRE programs follow either a single-track or multi-track attendance schedule. On a single-track schedule, all students and teachers attend school simultaneously. Traditional school calendars use a single-track method. When using a multi-track method, students and teachers are grouped and scheduled to one of several intermittent tracks. This method allows schools to educate larger populations of students, and it is commonly used in rapidly growing districts. By staggering the different track schedules, not all students will attend school at the same time. Often, students are empowered to choose their attendance and break schedules (Palmer & Bemis, 1999). Limitations of multi-track scheduling include complications with the curriculum and scheduling siblings to similar tracks. However, given the basic principles of YRE, school districts with unique and varying demands can configure a year-round educational program to fit its needs.

Summer Learning Loss and the Effects of Year-Round Education

Though masses of literature exist surrounding summer learning loss, very little of it is empirically-based research. However, research by Allinder et al. (1992), involving 275 second through fifth grade students, provides solid evidence regarding learning loss.

These students demonstrated academic regression between the spring and fall on curriculum-based measurement (CBM) scores for children attending school using a traditional schedule. Measurements taken in the spring, and the following fall, indicated that second and third grade students regressed significantly in spelling, while fourth and fifth graders regressed in mathematics over the long summer break. Specifically, in the spring, grades 2 and 3 demonstrated a mean of 103.25 correct letter-word sequences compared to 93.43 in the fall; a difference of over one-half a standard deviation. The mean difference in correct digits also decreased, but was not statistically significant. Reciprocally, grades 4 and 5 achieved a mean of 43.06 correct digits in spring compared to a mean of 32.84 in the fall; a difference of nearly one standard deviation. This group's mean score for letter-word sequence remained stable from the spring to the fall (Allinder et al. 1992).

There are two other literary works that are representative of, and effectively summarize, the respective arguments pertaining to summer learning loss. The first is a synthesis of research by Charlie Naylor (1995), the second is a meta-analytic review by Cooper et al. (1996).

Contrary to the evidence provided by Allinder et al. (1992), Naylor (1995) suggests that existing research concluding academic regression over the summer is largely skewed by poor research designs. He asserts that the National Association of Year-Round Education (NAYRE), an organization that is "evangelical in its promotion," conducts most of the research providing negative growth over summer (p. 1). He suggests the NAYRE proclaims summer loss occurs when the results are not statistically significant. Naylor continues to cite literature (Kreitzer & Glass, 1990; Rasberry, 1992;

Wintre 1996) showing no significant achievement gains by students in YRE programs, and questions the motive for changing the current calendar when it causes "upheaval" (p. 3). Naylor did not expand on "upheaval," nor did he delineate the negative effects of "upheaval" on student achievement.

Naylor cites Wintre (1986) to support his argument against summer learning loss. Wintre researched 182 English-speaking, suburban and middleclass students attending a traditional calendar school in a suburb of Toronto, Canada. Her findings demonstrated slight improvement in academic skills over the summer, with varied results in math computation on the Metropolitan Achievement Test (MAT), a norm-referenced achievement test. Implications of Wintre's research establish summer learning loss as contextual, based on the homogeneity of the sample. Given a specific context, summer learning loss may not affect some students. Wintre also cites her small sample size and use of a single measurement instrument as other limitations. However, Wintre's research raises important questions regarding whom summer learning loss most affects, and whether norm-referenced achievement measures are suitable for measuring growth over time.

Naylor also cites Rasberry (1992) to support his argument against summer learning loss. According to Rasberry (1992), existing evidence suggests insignificant increases or no increases in academic achievement as a result of YRE, as well as increased expenses and scheduling problems. However, Rasberry's position paper fails to provide scientific verification that YRE adversely affects student achievement on growth sensitive measures, nor does it cite empirical evidence for many of its claims regarding the financial costs of YRE.

According to Naylor (1995), Kreitzer and Glass (1990) provide evidence for the argument against summer learning loss. Kreitzer and Glass reported insignificant differences on standardized norm-referenced test scores when they compared the achievement of the performance of year-round students with traditional calendar students from 1974. However, these research results should be view with caution because they used norm-referenced assessment scores, and the research methodology was questionable.

Cooper et al.(1996) took a scientific approach to exploring the research on summer learning loss. Examining 39 studies, and conducting a meta-analytic review of the thirteen most recent investigations, Cooper and his team concluded "summer loss equaled about one month on a grade-level equivalent scale, or one tenth of a standard deviation relative to spring test scores" (p. 3). Furthermore, they observed several recurring themes. These themes include:

1. Summer learning loss appeared to affect each student uniquely.
2. Students were more prone to regress in math (1.8 months) than in reading.
3. The largest areas of regression were observed in computation and spelling.
4. Summer loss seemed to increase as students became older.
5. "At-risk" students and students from low income families displayed far greater regression than other students - as much as double the loss in reading and language.

From these results, Cooper et al. concluded that children show little, if any, academic growth over the summer. Further, these researchers posited that the average regression ranges from one to three months.

Cooper et al.'s research was further supported by Kneese et al. (1995). This study indicated that year-round, "at risk" students displayed reading scores two-thirds of a standard deviation higher than their traditional calendar counterparts. In their meta-analysis of 15 studies looking at YRE's effects on students' achievement, Kneese et al. found that YRE has significant positive effects on student performance. They also concluded that achievement growth in a YRE program was greater for males than for females, and that larger achievement growth patterns were observed for students in single-track, rather than in multi-track, attendance schedules.

Other Effects of Year-Round Education

Implementing a YRE approach to learning has been noted to affect more than just student achievement. Socorro Independent School District in El Paso County, Texas, has observed positive direct effects since implementing a YRE calendar in 1991 (Barber, 1996). From 1988 to 1996, Socorro doubled in size from 10,000 to 20,000 residents. The school district accommodated the influx in student population by operating a multi-track, 60/20 YRE program in which three-fourths of all students attend school at any given time. The three-month summer was replaced with three, one-month breaks, called intersessions. During the intersessions, students can work, go on vacation, or attend any one of a number of services provided by the school. Despite a high unemployment rate and 70% low-income status in Socorro (common indicators of "at risk" students), Socorro's students have used the intersessions to mark overall improvements in all areas of academic achievement (Barber, 1996).

According to Barber (1996), Socorro's students also improved the quality of the community by participating in volunteer work during intersessions. Some students return

to school to make-up attendance, and others have participated in field trips and special topic workshops. According to Barber, keeping the school open year-round has made the library and Internet services more available to the community. Breakfast and lunch are available daily and offered to all students, even those on intersession.

Gandara (1992) further suggests YRE can result in lower teacher burnout and higher job satisfaction. Her research surveyed teachers in three newly converted YRE school districts and found that fewer teachers experienced burnout after changing to the YRE program. She also concluded that teachers' salaries increased significantly and teachers' attitudes about work improved.

Two years later, Gandara and Fish (1994) researched a pilot program intending to increase their student body population by a minimum of 18%, raise teachers salaries by 20%, reduce average class size by eight students per class, and provide additional services to "at risk" students. To do this, the school adapted a 60/15 year-round schedule comprising of sixty days of instruction followed by a fifteen-day break. With this YRE plan, the school was able to extend teacher contracts resulting in higher salaries. They also scheduled students on a multi-track system, accommodating larger numbers of students and creating smaller class sizes. The intersessions allowed for additional services to be rendered to "at risk" students. According to Gandara and Fish, all this was accomplished without necessary additional costs to the district aside from start-up expenses.

Opheim and Mohajer (1995) surveyed 105 elementary principals in Texas, including principals of all 59 participating YRE schools and 46 traditional calendar schools. Seventy-one percent of the YRE principals and forty-one percent of the

traditional school principals responded to questions regarding professional staff development, administrative issues, student achievement, and parental and community concerns. The results indicated that school principals believe that YRE a) does not cause staffing/development problems, b) reduces staff and student absences, c) increases academic achievement by decreasing retention problems and adding learning opportunities, d) does not cause confusion to general family operations other than child care, and e) reduces the overall budget and maintenance costs on a multi-track schedule.

Finally, staff at other schools, like Hilo Intermediate School in Hawaii, claim that YRE has helped with student behavior (Wildavski, 1999). Since implementing a year-round program, the number of student fights have dropped significantly (from 68 to 5 in the first quarter). Wildavski suggests the students tend to get less frustrated because the semester is shorter and they get needed breaks.

CHAPTER THREE

Conclusion

Summary of the Literature

Year-Round Education is not just a trend; its documented history dates back to the middle 1600's and was commonly used in urban areas in the 1800's and prior to WWII (Zykowski et al, 1991). Consequently, today's push for YRE might be considered more of a "rebirth" than a "reform." Currently, over two million students (www.nayre.org/statistics, 2001) attend a school practicing YRE, and the numbers are growing.

Many staff from districts using YRE programs report positive results in their schools and communities. Research suggests that academic achievement scores can rise (Allinder, 1992; Barber, 1996; Cooper et al. 1996), teacher salaries and job satisfaction can increase (Gandara, 1992), and the behavior problems, truancy and frustration levels of students can be minimized as a result of YRE (Wildavski, 1992). However, there is some evidence that YRE may not be beneficial for all districts and student groups (Wintre, 1986).

Implications for Practice

The overall research to date, though somewhat inconclusive, implies that summer learning loss is a real occurrence, particularly for some student groups (Cooper et al, 1996). In response to this, educators and leaders need to consider the potential benefits of YRE. Does this mean all schools should change to a YRE schedule? No. Some students, as in Wintre's (1986) research, do not demonstrate academic regression over the summer months. However, educators and policy-makers need to confirm that their

current educational services are appropriate for their community needs, and remain cognizant of which options are best for their students. For example, districts with large numbers of "at risk" and low socioeconomic students with difficulties in math my profit from a year-round school schedule

Rather than stonewalling the possibility of change, educator and policy-makers should conduct an in-depth school and community needs assessment. Then, and only then, should prioritization occur. Year-round education offers opportunities that go beyond the school. Innovative thinking and the willingness to change can optimize a school's potential. With strong leadership and community effort, many schools could enjoy positive growth as some communities have after instituting YRE (Barber, 1996).

Recommendations for Future Research

Though masses of literature exist surrounding year-round education, very little of it is empirically-based research. By general consensus (Naylor, 1995; Palmer and Bemis, 1999), the existing research is tainted by poor, incomplete research designs. Further, those studies are limited due to the difficulty isolating variables, reporting bias and subjectivity. Additionally, the existing research is inconclusive as to whether YRE is beneficial or detrimental to the academic achievement of all students. The major push for YRE stems from the theoretical notion of "summer learning loss." Despite varied evidence, support for this theory is increasing. However, as long as proponents for YRE continue to measure growth via standardized assessment instruments, the battle will be uphill.

More research regarding the effectiveness of YRE and summer learning loss needs to be conducted using appropriate measures. Allinder et al.'s use of CBM, rather

than standardized assessment instruments, is a central aspect of their study. It has been empirically shown that CBM is "more sensitive to student progress and related more consistently to a criterion measure of student growth" than standardized, norm-referenced achievement tests (Marston et al. p. 77, 1986). Because growth is reciprocal, Marston et al.'s work supports CBM as an effective tool for measuring both progression *and* regression: gains and losses. Furthermore, Marston et al. (1986) explain, "norm-reference achievement tests are psychometrically sound indicators of how a student performs in relation to other students, but are inadequate tools for measuring progress or growth" (p. 87). Why would a carpenter use a screwdriver to embed in a nail? "Norm-referenced achievements tests do not have high curriculum-related validity" (p. 87). High curriculum-related validity is rather important when measuring how students perform on curriculum measures. Future research on student growth should a) focus on intra-individual growth and b) be generated from measures highly correlated with the curriculum. Norm-references tests are not designed, nor capable, of providing this imperative information. Standardized, norm-reference measurements "prohibit meaningful comparison's between students' current performance with their past or their expected performance," and " are not sensitive to gradual, but important, improvements in students performance" (Good & Jefferson, 1998. p. 68). Thus, future research should focus on expanding on Allinder et al.'s work by using growth sensitive measures to observe gains or losses (growth) in academic achievement. Through this research, evidence regarding the effectiveness of YRE and the existence of summer learning loss can be substantiated or negated.

Limitations

The compilation of this research paper is only a literature review, therefore no empirical investigation was attempted or completed. Further, researcher bias may have inadvertently skewed the results. In addition, no new information was contributed to the field of education as a result of this review.

Summary

Year-Round Education (YRE) has been a largely debated topic in recent years. The literature reveals varied results pertaining to the effects of year-round programs, including its promise in alleviating summer learning loss. Some research proposes that summer learning loss is a real phenomenon, while others purport that it simply doesn't exist. Nonetheless, an increasing number of school districts are implementing forms of year-round schooling and reporting positive academic results. Further, many argue YRE's logistic and financial benefits. This paper reviews the existing research on YRE. It concludes with a critical analysis of the literature, and recommendations for practice and future research.

References

Allinder, R. M., Fuchs, L. S., Fuchs, D., Hamlett, C. L. (1992). Effects of summer break on math and spelling performance as a function of grade level. *The Elementary School Journal, 92,* 451-460.

Ballinger, C. E., Kirschenbaum, N. & Poimbeauf R. P. *The year round school: Where learning never stops*, Phi Delta Kappan Educational Foundation, 1987

Ballinger, C. (1995). Making the case for year-round education. *Curriculum Review. 35* , p 4-6,

Ballinger, C. (1998). *Vital speeches of the day.* 08/15/98, 64, 659

Barber, J. R. (1996). Year-round schooling really works. *Education Digest, 62,* 31-33.

Cooper, H., Nye, B., Charlton, K., Lindsay, J., & Greathouse, S. (1996). The effects of summer vacation on achievement test scores: A narrative and meta-analytic review. *Review of Educational Research, 66(3),* 227-268.

Davies, B., Kerry, T. (1998). Summer learning loss: The evidence and a possible solution. *Support for Learning, 13,* 118-122.

Davies, B., Kerry, T. (1999). Improving student learning through calendar change. *School Leadership & Management, 19,* 359-371.

Gandara, P. (1992). Extended year, extended contracts. *Urban Education, 27,* 229-247.

Gandara, P., Fish, J., (1994) Year round schooling as an avenue to major structural reform. *Educational Evaluation and Policy Analysis, 16,* 67-85.

Glines, D. (1998). *Year round education: Creating a philosophical rationale*--present to 2000. Paper presented at the meeting of the National Association for Year Round Education Annual Conference, Houston, Texas.

Good, R. H., & Jefferson, G. (1998). Contemporary perspectives on curriculum-based measurement validity. In Shinn, M. R. (Ed.) *Advanced applications of curriculum-based measurement* (pp.61-88). New York: The Guilford Press.

Kasnic M. (1999). *Learning, retention and forgetting*. A case study by Michael Kasnic of Emporia State University. (http://www.emporia.edu/butcher/yre.htm)

Kneese, C. C. (1996). Review of research on student learning in year-round education. *Journal of Research and Development in Education, 29,* 60-72.

Kreitzer, A., & Glass, G. V. (1990). Policy considerations in conversion to year-round schools. *New Brunswick Educational Administrator, 19*, 1-5.

Marston, D., Fuchs, L., & Deno, S. L. (1986). Measures of pupil progress: A comparison of standardized achievement tests and curriculum-based measurement. *Diagnostique, 11,* 77-90.

National Association of Year-Round Education (2002, August 21). *Growth of public year-round education in the united states over a 15-year period.* Retrieved from http://www.nayre.org/statistics.html

Naylor, C. (1995). Do year-round schools improve student learning? *An annotated bibliography and synthesis of the research*. BCTF Research and Technology Division.

Opheim, C., & Mohajer, K. H. (1995). Evaluating year-round schools in Texas. *Education, 116,* 115-120.

Palmer, E. A., & Bemis, A. E. (1999). *Year-Round Education*. (Just in Time Research: Children, Youth & Families). Article retrieved July 26, 2002, from www.extension.umn.edu/distribution/familydevelopment/09

REB Communications and Publishing Inc. (2001, June 21). *Shrinking summer robs children of critical experiences.* Retrieved from http://www.summermatters.com/

Shinn, M. R. (Ed.). (1998). *Advanced applications of curriculum-based measurement.* The New York: Guilford Press.

Wildavski, B. (1999). Scholars of summer. *U.S. News and World Report 8/29/33, 127* 52-54.

Wintre, M. G. (1986). Challenging the assumption of generalized academic loss over summer. *Journal of Educational Research, 79,* 308-312.

Zykowski, J. L., Mitchell, D. E., Hough, D., & Gavin, S. E. (1991). *A review of year-round education research.* California Educational Research Cooperative, School of Education, University of California, Riverside.