

Year-Round Education

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Abstract

An extensive review of literature from the last three decades provided data regarding models of year-round education (YRE), perceived advantages and disadvantages of alternative calendars, and evidence to support or refute such claims. Many studies on the effects of YRE suffer from inadequate research designs or incomplete reporting of data making it difficult to draw conclusions. Still, in 75 analyses of student achievement, 42 revealed no significant effect on achievement for students attending year-round schools (YRS) while 27 indicated significant positive effects. Data on other outcomes such as attitudes, attendance, professional development, and the impact on families was for the most part inconclusive. In sum, it is reasonable to conclude that students attending YRS are likely to perform as well as if not better than their peers in traditional nine-month programs, especially at the upper elementary school level.

Introduction

In an effort to inform activities and policies related to recent Minnesota legislation on alternative school calendars, this article provides a comprehensive and updated review of the literature and research on effective models of year-round education.¹ It begins with an overview of the legislation, followed by a description of the various models of year-round education (YRE) being implemented nationwide, a discussion of the perceived advantages and disadvantages of these alternative calendars, a review of research on the effects of YRE on student achievement and related outcomes, and finally, a summary of key policy issues raised by YRE.

Background

The first year-round school (YRS) in the United States opened in Bluffton, Indiana, in 1904 for the purposes of increasing school building capacity and student achievement (Glines, 1995). Maximizing facilities and improving educational outcomes by minimizing summer learning loss, offering remediation during intersessions and implementing creative curricular programs are still cited today along with the potential for saving money (Costa, 1987; Zykowski et al., 1991).

As support for YRE grows, more and more school districts are changing their school calendars based primarily on feedback from their constituents and the information provided by advocacy groups such as the National Association for Year-Round Education (NAYRE) and the Minnesota Association for Year-Round Education (MAYRE). With recent legislation in Minnesota², YRE has taken on new meaning as districts consider its potential for helping students achieve the state graduation standards. Although much has been written about YRE, most of the research to date has been incomplete or poorly designed, leaving educators at a loss for solid data upon which to draw conclusions (Adelman, 1992; Hazelton, Blakely, and Denton, 1992; Worthen and Zsiray, 1994). A more comprehensive

review of year-round models, their impact, and implications for public policy are needed to inform the emerging discussions.

Models of Year-Round Education

For the purposes of this review, YRS were defined as ones that reorganize their calendar such that blocks of instruction and vacation are spread throughout the year to make learning more continuous. Such programs do not add instructional days to those required of students, but simply reallocate the approximately 180 school days.³

Single and Multi-Track

Year-round schools are typically implemented as single-track (ST) with unified attendance or multi-track (MT) with staggered attendance programs, or some combination of the two. The primary difference between the two schedules is that single-track programs provide for the entire student body and staff to follow the same school calendar, whereas multi-track programs divide students and teachers into groups and assign each to one of several tracks with staggered instructional blocks and vacation periods.⁴ Early reports for the 1998-99 school year indicate that 2,986 year-round schools exist throughout the United States, Canada, and the Pacific Region. Ninety-eight percent of these are in the United States. Of these, 59 percent are single-track and 41 percent are multi-track (NAYRE, 1998a). These figures represent a five-fold increase from ten years ago, when only 494 public schools in the U.S. were on a year-round calendar. The number of students enrolled in YRS has increased almost 400%, from 428,961 in 1988-89 to 2,040,611 ten years later (NAYRE, 1998b).

Many varieties of year-round schedules have been implemented throughout this century. Estimates on the exact number vary, although it has been estimated that at least 50 different scheduling patterns exist (Quinlan et al., 1987). Only the most common of these will be discussed here.

60-20 and 60-15:

In the 60-20 schedule, the year is divided into three 60-day sessions with three 20-day vacation periods. A variation on this schedule is the 60-15, which allows for an additional three to four week common vacation. As with most year-round schedules, this plan can be carried out using either the single-track or multi-track system. Together, these two types of calendars account for 37.1 percent of all year-round schools. A variation of the 60-15 schedule is the Orchard Plan. In this plan, used by 0.3 percent of year-round schools, teachers work eleven months and the students rotate in and out of class.

45-15 and 45-10:

These two schedules account for the largest portion of all year-round calendars (39.6 percent). In the 45-10 system, 45 days of instruction are followed by fifteen days of vacation. The related 45-15 plan provides an additional four week common vacation for staff and students. Again, either of these plans can be implemented in either a single-track or multi-track system.

Concept 6:

In the Concept 6 plan, the school year is divided into six terms of approximately

43 days. Students and teachers attend two consecutive sessions and then have one session off for a total of 172 instructional days. During the 1997-98 school year, 8.3 percent of year-round schools were following this plan.

Table 1. Comparison of traditional vs. year-round calendars.

Calendar	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
Traditional												
45-15												
60-20												
Key:	Vacation/Intersession				In school							

Effectiveness of Year-Round Education

It is clear from the literature that both advantages and disadvantages are associated with year-round education (Stenvall, 1997; Worthen and Zsiray, 1994). Some of the perceived advantages are: improved achievement, improved teacher and student attendance, reduction in discipline problems, reduction in teacher stress, increased motivation among teachers and students after returning refreshed from more frequent breaks, and increased availability of enrichment opportunities during intersessions. The benefits attributed only to multi-track programs are easing of overcrowding, reduction in class size, opportunities for teachers to work year-round, and better use of facilities with potential for cost savings (Brekke, 1992; Stenvall, 1997).

Perceived disadvantages include: increased administrator burn-out, scheduling conflicts between family vacations and school or community activities, difficulty in arranging daycare, having siblings on different attendance schedules, difficulty in scheduling teacher in-service days, and increased costs of operation. In addition, the multi-track model may require additional operating costs, lack sufficient time for maintenance, be inconvenient for teachers (who may have to change classrooms during the year), lead to overworked clerical staff or administration, increase difficulties in communicating with staff or parents, and result in some students missing school events scheduled at off-track times (Stenvall, 1997; Worthen & Zsiray, 1994).

Little "hard" evidence regarding the impact of year-round education on outcomes other than student achievement exists in the vast literature on YRE and YRS.⁵ Because of the variation in quality of research and the high level of interest in this area, for the purposes of this review we only report results from studies utilizing comparison groups (e.g., pre/post-test for schools moving to year-round schedules; or year-round vs. traditional calendars) and providing tests of statistical significance. The latter criteria is intended as a means of highlighting what we really do know about the effects of YRE rather than simply summarizing the anecdotal evidence that is so prevalent in the literature.

Student Achievement

Studies examining the effects of YRE on achievement in the last three decades were collected and the results summarized.⁶ Thirty-three studies published since 1980 met our definition of YRS or YRE.⁷ Of the studies meeting our initial criteria, most dealt with YRE in elementary schools (i.e., grades 3-6).⁸ Our second set of selection criteria, met by 19 studies, was that the studies include at least one test of statistical significance and compare progress over a minimum one-year period. A final criteria for our vote count, met by 12 of the 19, was that the studies report positive or negative effects (Cooper, 1989). A total of 75 individual⁹ comparisons of standardized achievement tests in reading, math, language, writing, science, social studies, or the complete battery were obtained. Most included elementary schools that had followed a year-round schedule for 3-5 years, while the others had implemented such programs from 1-21 years ago.

Table 2. Vote-count summary of statistically significant directional findings of studies (1980-1997) of year-round schooling effects on achievement.

	Reading	Math	Language & Writing	Science	Composite	Total
Positive YR	11	9	5	1	1	27
Negative YR	2	2	2	0	0	6
Sign Test p-level	.015	.035	Ns	--	--	.005

Note: There were 42 tests of YRS effects that revealed no effect or pattern.

Table 2 presents a summary count of the statistically significant positive or negative effects of YRE on student achievement. Because we did not weight any study by its sample size the results should be viewed as suggestive of achievement trends. The results in Table 2 indicate that 27 of the 33 comparisons indicated significant positive effects of YRE on achievement. Likewise, 11 of 13 comparisons in reading and 9 of 11 in math showed significant positive results. In sum, it is reasonable to conclude that students attending YRS are likely to perform as well as if not better than their peers in traditional nine-month programs, especially at the upper elementary school level.

Limitations

As has been true of many such efforts prior to ours, this review of studies on the effects of YRE and student achievement has several limitations. First, the quality of research designs varied considerably. By requiring tests of significance, however, we included only those studies with comparisons over time (i.e., prior to and after implementing YRE) or between different school calendars (e.g., year-round and the traditional, 9-month). Still, many of the studies spanned only one year.¹⁰ Most studies sampled schools, with several comparing a single year-round

school to a traditional school with similar student demographics. Some also tried to control for students' socioeconomic state, ethnicity, and gender in their analyses. Still, a number of studies did not adequately describe their samples. Second, many studies did not conduct statistical tests or if they did, did not report all of the relevant data to allow a more sensitive summary analysis of the results across studies.¹¹ Third, studies did not always specify the type of year-round calendar or whether it allowed for additional days of instruction through intersessions or other extended learning programs. The few studies that attempted to examine the effects of intersessions suffered from poor research design. Finally, changes in the school calendar are often accompanied by innovations in curriculum and instruction that were not taken into consideration in the analyses.

In addition to addressing the limitations noted above, future research might examine other trends noted in studies we reviewed including more consistent scores over time for YRS; a faster rate of growth in achievement for YRS; and the accumulation of greater benefits for at-risk students.

Related Outcomes

Research to assess claims regarding the advantages and disadvantages of year-round education was also reviewed. In most instances, few studies met our criteria for quality of research design and completeness of data. Nevertheless, we present a summary of findings on student attendance, teacher absenteeism, students' attitudes, teachers' attitudes, teachers' professional development, administrative burnout, parents' attitudes and the impact on families.

Student Attendance

One perceived benefit of year-round education is an increase in student attendance. Our review of twelve studies, however, showed mixed results in this area (Barron, 1993; Costa, 1987; Curry, Washington, and Zyskowski, 1997; Elsberry, 1992; Fardig, 1992; Gandara and Fish, 1994; Herman, 1991; Loyd, 1991; Prohm and Baenen, 1996; Schoewe, 1993; White, 1993; Woolley, 1996). These studies examined absenteeism primarily for programs operating on a 60-20/60-15 or 45-15 schedule and at the elementary and secondary school level. Of the five studies testing for statistical significance, only one (Elsberry, 1992) reported that students in year-round schools had significantly better attendance than the rest of the district. When non-significant differences were reported, they ranged from a two-day increase in attendance to a two-day decrease.

Teacher Absenteeism

It is also believed that year-round education may lead to reduced teacher absenteeism because of the more frequent vacations, at least in single-track schools where teachers do not work during intersessions. Our findings indicated that several studies do indeed show a decrease in teacher absenteeism, although these differences tend not to be statistically significant. Of the studies reviewed, six contained data regarding teacher absenteeism (Barron, 1993; Fardig, 1992; Gandara and Fish, 1994; Kocek, 1996; Loyd, 1991; White, 1993). Only two of the authors conducted tests of statistical significance, and neither of these indicated

any differences (Barron, 1993; Kocek, 1996). It is noteworthy, however, that five of the six studies did provide some evidence of a decrease in teacher absenteeism in the year-round schools, ranging from one to three days.

Student Attitudes

It is also believed that students on year-round calendars may have improved attitudes because of their more frequent breaks from school. Again, our review showed mixed findings. Only one study surveyed students regarding their attitudes toward year-round education both before and after implementation (Fardig, 1992). The results indicated that after one year of experiencing a 60-15 calendar, students felt more positively about year-round education.

Three studies compared the attitude toward school for students on year-round and traditional schedules (Nygaard, 1974; Powers, 1974; Shields, 1996). While one found no differences, the other two did report significant differences in favor of year-round education in at least a subsample of the student population (e.g., fifth-grade girls showed significant differences; boys did not).

Four studies examined students' attitudes about themselves in terms of self-confidence and self-concept. Two of the studies used the Student Attitude Measure to compare the self-concept of students in large, urban year-round schools to a national norm group (Alkin et al., 1983; Herman, 1991). Results from both studies indicated that the year-round students had significantly lower self-concepts than the norm group. Two additional studies compared year-round students to those on a traditional schedule (Nygaard, 1974; Shields, 1996). One found no difference using the Self Appraisal Inventory, while the other study found that students on a traditional calendar scored significantly higher on items having to do with self-acceptance on the Educational Process Questionnaire.

Teacher Attitudes

Related to the issue of teacher absenteeism is that of teacher attitudes, which are thought to improve with more frequent vacations. What did become clear in our review is that the more teachers experience year-round education, the more they like it. Seven of the studies reviewed offered data on teacher attitudes that met our criteria (Costa, 1987; Elsberry, 1992; Fardig, 1992; Loyd, 1991; Nygaard, 1974; Pelavin et al., 1979; Prohm and Baenen, 1996). All included elementary school teachers and three included middle or junior high school teachers. The attitudes measured were about year-round education, school quality, scheduling of personal activities, and morale.

It is clear from the studies of teachers' feelings about year-round education that their attitudes tend to improve with experience in these programs. All three of the studies comparing teachers' attitudes over time found that their satisfaction increased (Fardig, 1992; Loyd, 1991; Nygaard, 1974). One study comparing the year-round to a traditional calendar found that the teachers who were most accepting and positive towards the year-round schedule had the most exposure to it, while staff on traditional calendars had the most negative attitudes about it (Shields, 1996).

When year-round teachers took the Elements of Quality survey covering such topics as management, community confidence in school, and organization of school, they scored higher than teachers on a traditional calendar in all areas, though not significantly so (Costa, 1987). Another study asking about the ease of scheduling personal and family activities showed that year-round teachers expressed significantly higher satisfaction in this area than traditional calendar teachers (Elsberry, 1992). The Purdue Teacher Opinionnaire was utilized in one study that found no difference in morale between teachers on year-round and traditional schedules (Nygaard, 1974). Finally, when queried about school climate and effectiveness, year-round staff had a more positive attitude than did those on a traditional calendar in fifteen out of eighteen survey questions, although no significance tests were conducted (Prohm and Baenen, 1996).

Teacher Professional Development

One perceived disadvantage of year-round education is that teachers may have a more difficult time scheduling their professional development (e.g., many teachers take graduate classes during the summer vacation period). Only two studies met our criteria for the topic of professional development for teachers (Elsberry, 1992; Fardig, 1992). One questioned elementary teachers before they began their 60-15 year-round calendar and again after the first and second years of operation. Findings indicated that teachers found attending professional conferences, staff development activities, and college courses more difficult than they had anticipated. After two years, roughly half of the year-round teachers noted that participation in these types of activities was more difficult than it had been on a traditional calendar.

The other study compared traditional calendar teachers to those on a 60-20 year-round schedule and found no significant difference between the two groups regarding ease of attending professional meetings, staff development activities, or college courses.

Administrative Burnout

It has been hypothesized that because principals of year-round schools are required to deal with the most difficult times of the year (i.e., the beginning and end of school) every six to nine weeks, they may experience more stress and/or burnout (French, 1992). Only one study included empirical data on the oft-cited factor of administrative burnout (French, 1992). Researchers administered the Maslach Burnout Inventory to 69 year-round and 70 traditional schedule elementary principals and found no significant differences in their emotional exhaustion, depersonalization, or personal accomplishment.

Parent Attitudes

Six studies included either a comparison of attitudes about switching to a year-round before and after transitioning, or a year-round vs. traditional calendar comparison of parent attitudes (Elsberry, 1992; Fardig, 1992; Nygaard, 1974; Pelavin et al., 1979; Prohm and Baenen, 1996; Shields, 1996). All three studies (Fardig, 1992; Nygaard, 1974; Pelavin et al., 1979) gathering data on parents'

attitudes toward year-round school both before and after implementation found their opinions became more positive over time. Fifty-three percent favored year-round education during the summer before implementation, while 79 percent favored it at the end of the first year. Of the three studies comparing the opinions of parents of children on traditional vs. year-round calendars, one (Shields, 1996) found no difference in satisfaction, while the other two (Elsberry, 1992; Prohm and Baenen, 1996) indicated that parents with children in year-round programs had a more positive attitude toward either their children's education or school climate and effectiveness; however, statistical testing was not done in any of these studies.

Impact on Families

One disadvantage of year-round education that is cited is the possible adverse impact on families in terms of scheduling vacations and childcare. Again, studies showed mixed results in this area. Three studies with questions for parents regarding vacation planning and childcare met our criteria for inclusion (Fardig, 1992; Pelavin et al., 1979; Shields, 1996). Findings from the study comparing parents' opinions before and after implementation found that childcare and vacation arrangements were not as difficult as these parents had anticipated. The other two studies compared parents of children on each calendar and found no differences between these groups in terms of childcare or vacations.

Limitations

Aside from more positive attitudes on the part of teachers, the research on non-academic outcomes attributed to YRE and YRS is for the most part inconclusive. Research designs are severely limited by sampling bias (e.g., higher proportions of at-risk students were enrolled in the year-round school), lack of adequate comparison groups, little attention to changes over longer periods of time, and few tests of statistical significance.

Policy Considerations

Several policy issues are raised by the research on YRE and YRS. These issues are presently being examined more closely by the Alternative Calendar Working Group which is preparing a report on their findings and recommendations for the 1999 legislative session. Their report will include the results of interviews with key staff at each of Minnesota's year-round schools as well as the Oxnard School District in California which has followed a year-round calendars since the 1970s. It will also include discussions of YRE with regard to the following areas of policy:

Curriculum and Instruction: opportunities for educational reforms through differential uses of time;

Staff working conditions: dealing with teachers' contractual and licensure issues, and administrative burden;

Facilities: optimal utilization of existing and funding for new buildings and facilities;

Other: scheduling and transportation issues;

Impact: special student populations (e.g., disabled, at-risk); families; businesses and the community; extracurricular activities, athletics, and youth development programs; institutions of higher education;
Research: procedures for tracking and reporting the year-round status of schools and achievement data based on the number of instructional days; quality of research on key outcomes.

Summary

This document reviewed research and other publications from the last three decades to provide an overview of the models of YRE, perceived advantages and disadvantages of alternative calendars, and evidence to support or refute such claims. Much of the empirical data regarding the effects of YRE on student achievement and other related outcomes suffers from poor research designs or incomplete data making it difficult to draw conclusions. Still, it is reasonable to conclude that year-round education at least at the upper elementary school level has a positive effect on student achievement. In addition, further research will likely provide support for trends indicating more positive attitudes on the part of teachers.

Endnotes

¹ See also, Kneese (1996), Winters (1995), and Worthen (1994).

² The Minnesota legislature recently enacted laws to support flexible school scheduling. Minnesota Statutes 120.59-120.67 guide the evaluation, planning and implementation of "Flexible Learning Programs" to help meet the educational needs of students. Such programming includes, but is not limited to, plans involving 45 days on, 15 days off school scheduling; four-quarter, quinmester or flexible all-year schedules; extended learning year programs; and four-day weeks. This article examines one type of flexible learning program: year-round education (YRE).

³ Using this definition, programs that extend or add time to the school day, week or year are not included.

⁴ The primary reason for implementing a MT calendar is to increase schools' capacity for serving increased enrollments (Costa, 1987; Hazelton, Blakely, and Denton, 1992; Zykowski et al., 1991).

⁵ It has been suggested that the advantages and disadvantages of year-round models discussed below are due more to their status as single- or multi-track rather than to the particular configuration of days on and off within a track.

⁶ Relevant literature, including published and unpublished reports and articles from refereed journals, was identified in the following manner. First, a search was conducted using several electronic databases. Documents in the ERIC database were published from 1966 to 1998, PsycINFO from 1967 to 1998, and from 1983 to the present in both the Social Sciences Abstracts and Education Abstracts. Second, relevant reports were requested from the Minnesota legislature and the U.S. Department of Education. Third, bibliographies of recent reports and articles were examined for additional materials. The literature search resulted in 64 total

documents, 40 of which contained empirical data on the effects of year-round education and 24 reports of a descriptive or theoretical nature.

⁷ Our search of the literature identified only three studies with achievement data prior to 1980. Two recent meta-analyses by Winters (1995) and Kneese (1996) were also acquired and compared to our sample. Winters' review was based primarily on evaluation studies readily available to the National Association for Year-Round Education.

Kneese's study included a more exhaustive search of the literature. Our sample included all but six of the studies reviewed by Kneese (4 evaluation reports and 2 dissertations) as well as many others.

⁸ Three studies were of middle schools, three of high schools, and three did not specify any grade level.

⁹ Individual tests were based on separate samples (e.g., 3rd grade, 6th grade, reading, math, etc.). Because many of the same students took multiple tests (e.g., reading, math) we cannot assume independence of data points.

¹⁰ One study noted that the positive impact of the year-round over the traditional calendar disappeared by the third year of implementation, suggesting a need to adhere to the common research practice of examining longitudinal data for a minimum of three years.

¹¹ A more rigorous meta-analysis is planned at a later date and will take into consideration sample size and quality of the research design.

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