MODIFICATION OF SCHOOL ATTENDANCE FOR AN ELEMENTARY POPULATION

ROBERT M. BARBER AND J. ROBERT KAGEY¹

HANOVER COUNTY SCHOOL SYSTEM AND RANDOLPH-MACON COLLEGE

The staff and students of a school composed of Grades 1 through 3 participated in a program to increase school attendance. Children earned the opportunity to attend part or all of a monthly party by their attendance. Immediate feedback occurred each morning by placing stars on a classroom chart for each child present. The school's attendance during the program was compared both with attendance during preceding years and with attendance at other schools. The experimental school's attendance improved dramatically to become the best of all elementary schools in the system.

DESCRIPTORS: attendance, school absenteeism, truant behavior, systems management, elementary students

The school system has perhaps been the most influential community agency in regard to child development. However, the effects of school, both academic and social, are minimized in high-truancy areas. A comprehensive report by the Children's Defense Fund (1974) documented the widespread nature of the problem of truancy. The report consisted of data from over 6500 families in nine states. An analysis of the data indicated that children from every racial group and income stratum are truant. However, some factors appear to be related to higher truancy: rural communities, low income and unemployed households, families with little education, and minority groups. The report emphasized that the 1970 U.S. census data, which indicated that over 750,000 elementary school children were not attending school, was probably an understatement of the truancy problem. Many children who attend infrequently or irregularly may not be included in the census data. Numerous rea-

sons are given for the child not attending school, such as special needs of the child and disciplinary actions of the school staff, but one of the most frequent single reasons for nonattendance was simply stated as "habitual" truancy. Many of the Children's Defense Fund (1974) report's suggestions for eradicating of truancy required extensive changes in the school and in the community's social services. Similarly, effective programs such as Demsch and Garth's (1970) Program Impact in the Chicago School System have limited application, because they require additional personnel and funds. Program Impact established separate classes at the elementary level for five to 10 boys who were frequently truant. Of 36 boys in Program Impact classes for at least 1 yr, 29 continue to attend public school and three were in vocational schools.

Because of the extensiveness of the truancy problem, economical programs must be developed that can be implemented in different situations. Behavioral programs have been economical and effective in eliminating truancy in the phobic child (Ayllon, Smith, and Rogers, 1970; Hersen, 1970). MacDonald, Gallimore, and MacDonald (1970) demonstrated the effectiveness of behavioral programs over more traditional programs for improving the attendance of groups of chronic truants. Whereas, Ayllon

¹Mr. Barber is now the school psychologist/supervisor of special education for Galax City Schools, Virginia, and Dr. Kagey is a psychologist with the Greater Lynn Community Mental Health Program, Lynn, Massachusetts. Reprints may be obtained from Robert M. Barber, Galax City School, P.O. Box 855, Galax, Virginia 24333. The authors wish to thank Mary Albano for her assistance in preparing this manuscript.

et al. (1970) and Hersen (1970) depended on parents to place appropriate consequences on the truant's behavior, MacDonald *et al.* (1970) demonstrated the effectiveness of utilizing currently available school personnel. Copeland, Brown, Axelrod, and Hall (1970) and Copeland, Brown, and Hall (1974) demonstrated that principals can increase the rate of student attendance by verbally reinforcing parents for their children's presence at school.

The present study investigated the feasibility of establishing a behavioral program to remediate the truancy problem for an entire school population by using available school personnel. The program was not directed toward a specific child who was labelled phobic or even a small group of truants, but the entire school population.

METHOD

Subjects and Setting

The present study was completed at an elementary school in Virginia;² consisting of three first grades, four second grades, and three third grades with a population of 212 children. There were 12 instructional staff: the principal, a teacher of special education, and 10 classroom teachers.

The school was located in a small town and drew many of its students from the surrounding rural area. The school's past was marked by poor attendance, and it was consistently ranked below all of the county's other elementary schools in regard to attendance. Parents, teachers, and administrators were aware of the problem of truancy and were determined to make a concerted effort to encourage the children to attend school during the 1972/73 session. However, after the first three months of school, September through

November, there was no improvement in the children's attendance behavior.

At the beginning of December, the principal of the school requested assistance in improving attendance. A behavioral program was developed by the authors, presented to the school's staff, and accepted. During the 2-hr presentation of the program, teachers were instructed in the importance of placing positive consequences on the children's behavior in order to improve their attendance. At the initial presentation, and throughout the entire experimental period, the school's teachers were given the opportunity to suggest improvements toward implementing the program.

The program was designed so that children could earn an opportunity to attend part or all of a monthly party. The amount of party time children earned was based on the number of days they came to school. A child with perfect attendance for the month earned the full 1-hr of party time and admittance to four "fun rooms". Children missing one day of school earned 45 party minutes and were admitted to only two "fun rooms". Those missing two days during the month earned 30 party minutes and one "fun room" while those missing three days, earned only 15 party minutes and no "fun rooms". Children who missed more than three school days during the month were sent to a special workroom where they were required to complete constructive academic assignments. Also, children who received only partial party time had to go to the work room for the initial part of the party to complete a short academic assignment.

Recording Procedure

Beginning in January, attendance charts were kept in each room to provide immediate feedback and to keep a visible record of each student's attendance. After the classroom attendance roles were called each morning, a student, the "Attendance Star Sticker", placed a star beside each child's name who was present for that school day. The job of "Attendance Star Sticker" was rotated weekly.

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Definition of attendance. Children were required to be present in school for at least half the school day before they could earn an "Attendance Star". Thus, a student could be tardy and still receive credit for a full day's attendance. The tardy child however, was required to check in at the principal's office where a record was kept of such children. Also, office records were kept on children who left school early and, therefore, were not in school for the required half day. At the end of each month, the principal compared each teacher's classroom record of attendance with information recorded in the principal's office. This comparison helped to ensure accuracy of teachers' data. Reliability checks by an independent observer were not possible in this study. In situations where a child did not earn any of the party because of an illness, the principal was responsible for validating the child's excuse and deciding if the child should be allowed to attend the party. The principal reported that such decisions were infrequent and that during the experimental period there were no complaints from parents or teachers regarding the earning of party time. The following data include only those children who were present for at least half the school day.

Attendance formula. The monthly per cent attendance was calculated as a ratio of the total number of days the 212 students were present during the month over the greatest possible number of days, assuming each student had perfect attendance for the entire month. For example, January 1973 per cent attendance was calculated as follows:

$$\begin{aligned} \text{Per Cent Attendance for Jan. 1973} &= \frac{\text{Total no. days 212 students present in Jan.}}{(\text{No. of school days in Jan.}) \times (\text{No. of students enrolled in Jan.})} \times 100 \\ &= \frac{4380 \text{ days}}{(22 \text{ days}) \times (212 \text{ students})} \times 100 \\ &= 92.90\% \end{aligned}$$

Small percentage changes indicated a substantial change in composite days of attendance for the school population. For example, a change from 91% to 92% attendance would have been an increase in about 45 composite days of stu-

dent attendance over a typical 21-day school month for the student body of 212 children.

Experimental Phases

Baseline. Attendance data during the first three months of school, September, October, and November, were measures of the students' behavior before the behavior program was initiated.

Introduction phase. During the first week in December, the teachers carefully explained the program to the children; letters describing the program were sent to parents. The children and parents were told that the program would begin with a party in January, the day after the children returned from the Christmas holidays. Frequently during the month of December, teachers discussed the attendance program with the students. During these discussions, the opportunity to earn party time by attending school was stressed. However, the January party was not a consequence of attendance but simply allowed *all* the children to sample the reinforcers. Following the party, the attendance program was again explained to the children and the importance of their school attendance stressed.

Attendance charts and contingent parties. Beginning in February and continuing through May, the monthly party for the preceding month's attendance occurred on the first Wednesday of each month, which usually gave the teachers several days to compute attendance figures and prepare the necessary academic assignments. Each classroom teacher was responsible for listing those children who had missed either no days, one, two, or three days of school. Then, the teacher completed a party attendance slip for each child that denoted the number of "fun rooms" each child had earned. Also, the teacher prepared an academic assignment for the children who did not receive the full 60-min party time. On the day of the party, the teacher gave students their party attendance slip and/or academic assignment sheets. The teacher told the children where each "fun room" would be located and what was happening in each. The

"fun rooms" varied from month-to-month and included short movies, dancing, puppet shows, games, and art.

Before the party began, those students who had not earned the full 60 min were escorted to one of the two work rooms. After the children were escorted to the work rooms, and 10 min before the "fun rooms" opened, the perfect attenders were allowed to go to the party, where they were given a free drink and allowed to purchase candy. At the end of 10 min, a bell signalled the "perfect attenders" to select and go to any of the four "fun rooms". Upon entering, their attendance slips were checked by the teacher who supervised that particular "fun room". At the completion of the first "fun-room" period (15 min), the perfect attenders would choose another "fun room". The students were not allowed to remain in the same "fun room" for a second 15-min period. Following the perfect attenders' selection of a second "fun room", children who missed only one day were permitted to leave the work room, get their free drink, and buy candy. After the second "fun-room" period (15 min), the perfect attenders selected and entered their third "fun room" and the one-day absentees selected their first "fun room". Following their selections, the children who missed two days were allowed to leave the work room, get their free drink, and attend the fourth "fun-room" period (15 min). After the beginning of the fourth "fun-room" period, and during the last 15 min of the party, those children who missed three days were allowed to leave the work room, get a free drink, and buy candy. After the fourth "fun-room" period and, therefore, the end of the party, all children returned to their classrooms and prepared to leave, it being the end of the school day. These changes were coordinated by the principal and each change was signalled by ringing the school bell.

The teachers organized all the "fun-room" activities and several parents volunteered to help serve the free drinks and sell candy. Also, several students from a local college volunteered to help with the "fun-room" activities.

Before each party, the children were reminded that certain behaviors would not be tolerated at the party. The consequence of such behaviors as pushing or fighting would be restriction to the work room for the remainder of the party. Also, if a child lost his party slip, he had to return to the work room.

Attendance charts only. The attendance program was altered for the month of May by eliminating the attendance party. The children were told that the class would continue to maintain daily attendance "star charts", however, but that there would be no party.

Design

The attendance program was divided into four experimental phases: Baseline, Introduction, Attendance Charts, and Contingent Party and Attendance Charts Only. In this ABCD design, neither the Baseline phase nor the Attendance Charts and Contingent Party phase was replicated. The Attendance-Charts Only phase was an approximation of a reversal condition, but not a complete return to baseline. The experimenters and teachers were reluctant to withdraw all reinforcers for the last month of the school year.

RESULTS

Figure 1 compares the experimental school's monthly per cent attendance for 1972/73 with the school's average monthly per cent attendance for the four preceding years, 1968 to 1972. This month-by-month comparison controls for seasonal variables that might have a large effect on children's school attendance. During baseline, September through November, the data indicate that the experimental school's attendance for the 1972/73 term was consistently lower than the average attendance for the comparable months of the previous four years, 1968 to 1972.

During December, the Introduction phase, the explanations of the attendance program and discussions of the noncontingent January party ap-

Fig. 1. The experimental school's monthly per cent attendance for 1972/73 compared to the school's average monthly per cent attendance for the four preceding years, 1968 to 1972.

pear to have increased attendance behavior slightly. The attendance for December, 1972 was 1.34% higher than the average attendance for the four preceding Decembers (Table 1). The improvement in attendance during the Attendance Charts and Contingent Party Condition, January through April, was much more dramatic. The per cent attendance for the first four months of 1973 was superior to the average attendance of the corresponding months from 1968 to 1972, ranging from 3.97% to 6.07% (Table 1). Since a 1% change in attendance represented some 45 composite days of student attendance, the 4% to 6% increase in attendance represented a positive change of 180 to 275 days. This positive change in attendance is equivalent to about eight to 13 children attending school for a full month or 36 to 55 children attending school for an entire week. For the Attendance-Charts Only condition in May, attendance was 1.65% above the average for the previous four years but less than the 3.97% to 6.07% increases found during the Attendance Charts and Contingent Party condition.

Figure 2 compares the experimental school's 1972/73 attendance with the 1972/73 attendance of Grades 1 through 3 at nine other elementary schools, comparison schools, in the county. During Baseline, September through November, attendance at the experimental school was consistently lower than the average attendance of the nine comparison schools. During the Introduction phase, attendance at the experimental school was greater than the average attendance of the comparison schools. During the first month of the Attendance Charts and Contingent Party condition, the experimental school's attendance was slightly lower than the average attendance for the comparison schools. However, there was a consistent increase in attendance at the experimental school over the average attendance of the comparison schools during February, March, and April. The increase resulted in attendance at the experimental school being superior to all nine of the comparison schools during April. This rank of number one in school attendance is dramatic when compared with the school's rankings of last or next to last

Fig. 2. A monthly (1972/73) comparison of the experimental school's per cent attendance with the average per cent attendance for the system's nine comparison schools.

in per cent attendance for the entire Baseline period. Attendance at the experimental school during the Attendance-Charts Only condition was less than the average attendance of the comparison schools.

There was no significant difference between the experimental school's monthly per cent attendance for the Baseline phase (September, October, and November) of 1972/73 and for the same months from 1968 to 1972 ($T = 1.09$, D.F. = 13, $p > 0.05$). However, the experimental school's monthly per cent attendance during the Attendance Charts and Contingent Party condition (January, February, March, and April) for 1972/73 was significantly greater than during the same months from 1968 to 1972 ($T = 3.96$, D.F. = 18, $p < 0.01$). For the comparison schools, there were no significant differences from 1968 to 1972 to 1972/73 for the Baseline months ($T = 0.13$, D.F. = 13, $p > 0.05$) or the Attendance Charts and Contingent Party months ($T = 0.96$, D.F. = 50, $p > 0.05$).

There were significant *decreases* in per cent

attendance from the Baseline months (September, October, and November) to the Attendance Charts and Contingent Party months (January, February, March, and April) for the comparison schools during 1968 to 1972 ($T = 5.29$, D.F. = 26, $p < 0.001$), for the comparison schools during 1972 to 1973 ($T = 6.56$, D.F. = 61, $p < 0.001$), and for the experimental school from 1968 to 1972 ($T = 6.53$, D.F. = 26, $p < 0.001$). However, during 1972/73 there was no significant difference in the experimental school's per cent attendance from the Baseline months to the Attendance Charts and Contingency Party months ($T = 0.73$, D.F. = 5, $p > 0.05$).

DISCUSSION

The Attendance Charts and Contingent Party conditions appeared to increase the daily attendance of children in the first through the third grades.

When the behavioral project was announced in December, the children became very excited about the possibility of earning a monthly party.

Table 1
Per Cent Attendance for the Experimental School and the Comparison Schools

<i>Months</i>	<i>Experimental School</i>			<i>Comparison Schools</i>		
	<i>Average for 1972-1973</i>	<i>Average for 1968-1972</i>	<i>Change in Attendance for 1972-1973</i>	<i>Average for 1972-1973</i>	<i>Average for 1968-1972</i>	<i>Change in Attendance for 1972-1973</i>
September	95.62	96.32	-0.70	97.18	96.92	+0.26
October	94.03	95.27	-1.24	96.06	95.98	+0.08
November	92.71	93.61	-0.90	94.64	94.62	+0.02
December	94.58	93.24	+1.34	93.58	94.29	-0.71
January	92.90	88.71	+4.19	93.62	92.23	+1.39
February	94.49	90.52	+3.97	93.82	91.89	+1.93
March	95.61	91.44	+4.17	94.51	93.62	+0.89
April	96.97	90.90	+6.07	93.83	93.02	+0.81
May	94.16	92.51	+1.65	95.05	94.72	+0.33

This increase in attendance for December appeared to be a result of the introduction of a "new" program, which included the anticipation of monthly parties. However, the greatest change in attendance occurred during the following months, January through April, when the parties were directly contingent on the children's behavior. The decrease in attendance that accompanied the withdrawal of the party in May also seemed to demonstrate the significance of the party's reinforcing value.

The present study was initiated to resolve a practical problem in an applied setting. Since the initial emphasis was not on a research study, two major concerns exist with the research design: the method of obtaining reliability data on the teachers' recording of attendance and the absence of a reversal phase. If this study is replicated, perhaps access can be obtained to the teacher's rooms, so that an independent attendance record could be obtained. Since the school year is nine-months long, the baseline and experimental periods must be shortened to two to three months so that a reversal phase, ABAB design, may be included. However, the experimenter must still control for seasonable variables by making comparisons with the attendance figures of other schools or with the attendance figures of the experimental school for previous years.

An important advantage of the program was

that it did not require detailed and lengthy discussion about behavioral principles. In the 2-hr introductory meeting with the teachers, there was a brief discussion about the effects of placing positive consequences on children's behavior. The majority of the session was spent in review of the authors' detailed program for improving attendance. A schedule of parties and a list of teachers' duties were presented. The duties included specific steps for presenting the program to the children and guidelines for the teacher in recording the attendance behavior. Each teacher was provided a written outline to follow as the program was presented.

The principal and teachers were very receptive to the entire program. Before the program was initiated, the school's staff had often voiced their frustration at trying to teach children who were frequently absent. The program encouraged children to be present so that they might have greater exposure to educational material.

An attendance program offers an important economic consideration, which might be quite interesting to public school administrators. Some states allot to their local school systems various state educational monies based on the average daily attendance of the local student populations. For example, for a perfect year's attendance, one state allots funds to the local school systems at the rate of \$125 per pupil, plus additional monies based on the assessed value of the

particular school district (the lower the assessed value the larger the allotment). If a student has unexcused absences, then the per-pupil allotment is less than the \$125 plus additional monies, proportional to the number of days the student is absent. If in this particular state, attendance could be increased 5% in a school similar to the experimental school (212 students), then the rate per pupil would increase \$6, plus perhaps additional monies depending on the assessed value of the district. By increasing attendance at this one school by 5% for the year, there would be a minimum increase of \$1272 ($\6×212 students) for the school system. Through the use of attendance programs in several or possibly all of its schools, the school system could significantly raise the attendance percentages of its student population, which could mean hundreds or even thousands of dollars in additional state funding through the year.

The application of behavioral principles to an entire school population of first, second, and third graders increased school attendance. Perhaps further research will demonstrate if similar programs may change other behaviors common to the entire elementary school population.

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