Effectiveness of the Completion Bonus Program for Achievement in Adult Education

Mary Ziegler
University of Tennessee, USA

Olga Ebert
Universtiy of Tennessee, USA

Effectiveness of the Completion Bonus Program for Achievement in Adult Education

Mary Ziegler and Olga Ebert
University of Tennessee, USA

Abstract: This study examined use of a cash bonus as an incentive for welfare recipients to make progress in Adult Basic Education programs and pass the GED test. The number of people in sixteen programs who made learning gains appears to have increased after the bonus program was introduced.

Purpose of the Study

The use of incentives as a way to improve performance or increase achievement is a common practice in a variety of settings. Their use for educational purposes raises a question about the efficacy of this practice with different populations. The purpose of this study was to examine the use of a cash bonus as an incentive for welfare recipients to make progress in and complete educational programs.

Tennessee legislation enacted in 1996 created Families First, a program designed to assist welfare recipients in obtaining employment and moving toward career advancement. In addition to cash grants typically received by individuals on welfare, Families First legislation made education, training, job placement, transportation, and childcare services available to the adults who qualified. When enrolling in Families First, welfare recipients who did not have a high school diploma or a General Education Development (GED) credential took standardized achievement tests to determine at what grade level they were functioning. Individuals who scored below the ninth grade level could pursue a GED credential by electing to take basic skills classes for 20 hours a week and not be subject to the time limitation for welfare benefits. Those who scored above the ninth grade level could continue to receive benefits while pursuing their GED; however, this group had a work requirement and a time limitation on welfare benefits. Educational programs that increased basic skills or led to a high school credential were considered preparation for employment. Although many Families First participants elected to attend basic skills classes, only a small percentage completed them and obtained a GED.

In March 2000, the state legislature introduced the Completion Bonus Program which was designed to encourage Families First participants to complete education and training programs that would contribute to their ability to find employment and advance to higher paying jobs. Although the cash bonus was awarded for a variety of activities, this study focused on the use of the cash bonus as a motivator for completing educational activities such as advancing in a basic skills program, receiving a high school diploma or passing the GED examination. The primary method for conducting this research was the replication of a study conducted by the Center for Literacy Studies at the University of Tennessee that identified the average length of time that it took Families First participants to make progress in adult basic education. This study was conducted prior to the introduction of the Completion Bonus Program and findings resulted in an identification of the average median number of days Families First participants took to make learning gains as measured by standardized achievement tests or pass the GED examination (Ziegler & Ebert, 1999). Researchers postulated that the replication of this study a year after the introduction of the completion bonus could reveal whether the reward of a cash bonus influenced the performance of Families First participants in adult basic education programs.

Theoretical Framework/Literature Review

The literature on incentive and reward programs reports contradictory and inconsistent findings about the role of incentives in developing intrinsic motivation. Cameron and Pierce (1994) examined reward contingencies and found no reason to resist implementing incentive systems. Kohn (1999) claims that people do inferior work

when enticed with rewards. Others say that the effectiveness of incentives depends on numerous factors and enumerate specific conditions that must be present for an incentive system to produced desired results.

Existing research (Deci & Ryan, 1985; Delves, 1999; Hays, 1999; Hill & Pavetti, 2000; Lee, Locke, & Phan, 1997; Nelson, 1994; Ryan & Deci, 2000) suggests that important factors to consider in the design and administration of reward, incentive, and bonus programs include:

- Building credibility of an incentive program by making it realistic, achievable, and sincere;
- Demonstrating a clear link between performance outcomes and the bonus;
- Administering rewards that are scaled and weighted based on varying degrees of accomplishment;
- Recognizing individual differences and giving recipients and participants a choice of rewards;
- Recognizing and minimizing bureaucratic organizational practices and processes that frustrate participants and detract from the motivational effectiveness of the reward; and
- Giving bonuses and rewards promptly and as soon as possible after the successful outcome has been achieved.

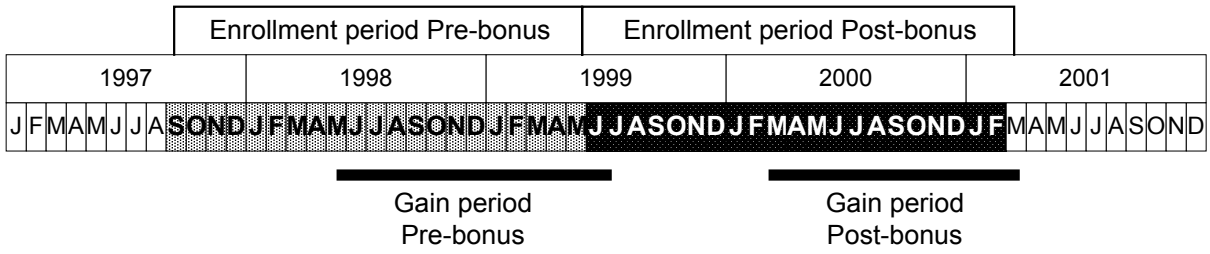
The literature is not definitive on the use of incentives for learning and no prior studies were found that specifically studied the use of incentives with adults who receive welfare benefits.

Research Design

The design of the study included a replication of a prior study conducted in 1999 that identified the average length of time that welfare recipients in Families First took to make progress in an adult basic education program. Researchers had collected information on the achievements of participants from a convenience sample of sixteen Adult Education programs in Tennessee (Ziegler and Ebert, 1999). The current study design used the data collected from the 1999 study on the "average length of time to make progress" *before* the implementation of the bonus program as a baseline to compare new data gathered on the "average length of time to make progress" *after* the implementation of the bonus program.

The same sixteen programs, two urban and the rest rural or semi-rural, located in the three grand regions of the state, participated in both studies. Data from 594 pre-bonus and 955 post-bonus participant records were compared to determine whether the bonus program influenced the performance of Families First participants in basic education classes. All the records were entered into an SPSS database and analyzed utilizing several different statistical tests. The primary research question of the study was: "Is there a difference between the length of time needed for Families First participants before and after the introduction of the completion bonus to pass the GED test and to make learning gains as measured by the standardized tests?" This study compares the achievements of Families First participants from before the introduction of the bonus (pre-bonus group) and after the bonus program was implemented (post-bonus group) to determine if the bonus is an incentive for participants to improve their performance. Also compared are the achievements of the traditional (voluntary) students enrolled in the same Adult Education programs.

Data selected for analysis were from two groups that represented time periods when the most complete information was available. The pre-bonus groups included both Families First participants and traditional students who (a) enrolled in an Adult Education program from September 1, 1997, to May 31, 1999, and (b) achieved a learning gain between June 1, 1998, and June 30, 1999. The post-bonus group included both Families First participants and traditional students who (a) enrolled in an Adult Education program between June 1, 1999, and February 28, 2001, and (b) achieved a learning gain between March 1, 2000, and March 31, 2001.



Legend:

– months in the enrollment period Phase I, pre-bonus period

– months in the enrollment period Phase II, post-bonus period

Figure 1. Enrollment periods for comparison groups.

This configuration of the samples ensured their maximum comparability and the largest number of eligible participants.

Data Analysis

The post-bonus data were analyzed and then compared to the pre-bonus data from the 1999 study to determine if there were any statistical differences between the two sets of data. No statistical differences were found in the number of days needed to achieve any of the learning gains for the pre-bonus and the post-bonus groups. Because the "number of days needed to achieve gains" was not quite a normally distributed variable, nonparametric tests (Mann-Whitney U) were conducted to compare the length of time the two groups took to make progress. Table 1 shows the number of days needed to achieve learning gains for the pre- and post–bonus group of Families First participants. Table 1 summarizes the median number of days that the two groups needed to achieve the three learning gains (6^{th}- and 9^{th}-grade levels and the GED test). For comparison purposes, this group was enrolled no longer than 9 months prior to the beginning of the periods when the data on gains were collected. There was no difference between the pre-bonus and the post-bonus groups with respect to the number of days taken to make progress. The implementation of the Completion Bonus Program did not seem to affect the rate at which Families First participants achieved learning outcomes.

Table 1. Families First: Comparison of Days to Achieve Learning Gains or Make Progress

	Days to 6^{th}-Grade level (median)	Days from 6^{th}-grade to 9^{th} grade level (median)	Days from 9^{th}-grade level to GED (median)	Days from intake (any level) to GED (median)
Pre-bonus group	98	79	49	101
Post-bonus group	101	85	42	97

Although the pre- and post-bonus groups progressed at the same rate, there were significant differences between the number of people who made the gain in the pre-bonus and post-bonus periods. More Families First participants achieved learning gains in the post-bonus period than they did in the pre-bonus period. Table 2 shows the number of Families First participants who achieved learning gains or passed the GED examination during the two gain periods.

Table 2. Number of Families First Participant Who Achieved Learning Gains

	Number of people who achieved 6th-grade level	Number of people who achieved 9th-grade level	Number of people who passed the GED (after attending AE)
Pre-bonus group	52	27	81
Post-bonus group	112 (115% increase)	123 (356% increase)	189 (133% increase)

The number of post-bonus Families First participants who achieved learning gains in Adult Education increased as compared with the pre-bonus group. The difference between the pre- and post-bonus groups is noteworthy. After the introduction of the bonus program, the number of participants who achieved the 6th-grade level more than doubled. The largest post-bonus increase (356%) was in participants who reached the 9th-grade level. The number of participants earning a GED increased 133%. At the same time, based on the information provided by the programs participating in this study, the number of Families First participants attending basic education classes had not increased.

This study does not claim to present complete information on all the learning gains achieved by Families First participants. Researchers were limited by several factors; however, these limits were consistent from year to year, as were the methods of data collection and analysis. These samples included participants who were enrolled in basic education classes for no longer than 1 year 9 months. Thus, it is possible to conclude that, using a true replication design, more Families First participants achieved learning gains in the 16 counties after the completion bonus.

Researchers examined the data for the traditional Adult Education students, to determine (a) how different they were from the Families First participants in terms of their intake placement level and (b) whether the number of people who achieved learning gains in traditional Adult Education classes had also increased between the two study periods. Table 3 summarizes the number of traditional students who achieved learning gains during the two gain periods and who enrolled in Adult Education up to 9 months prior to the beginning of the periods.

As is evident from Tables 2 and 3 and summarized in Table 4, both traditional Adult Education students and Families First participants from the 16 participating counties experienced an increase in the number of students who achieved the 9th-grade level in reading and math and in the number of those who passed the GED test. The increase was statistically larger for the Families First participants than for traditional Adult Education students for the 9th-grade level gain and the 6th-grade level (the number of those who achieved the 6th-grade level actually decreased in the traditional Adult Education group).

Table 3. Achievement of Traditional Adult Education Students

	Intake level			Achieved 6th-grade level no later than 1 year 9 months after enrollment (*n*)	Achieved 9th-grade level no later than 1 year 9 months after (*n*)	Passed GED no later than 1 year 9 months after enrollment (*n*)
	Below 6th grade (*n*)	6th to 9th grade (*n*)	Above 9th grade enrollment (*n*)			
Groups enrolled	89	161	88	59	94	246

between 9/1/97 and 5/31/99	(26%)	(48%)	(26%)			
Groups enrolled between 6/1/99 and 2/28/01	115 (117% increase)	249 (37.5% increase)	318 (46.5% increase)	45 (24% decrease)	183 (95% increase)	497 (102% increase)

Table 4 shows a comparison between the numbers of Families First (FF) participants and traditional Adult Education students who made learning gains during the same time periods. Although there was an increase in the number of traditional students in Adult Education who achieved 9th grade level and the GED, the increase is larger for Families First participants.

Table 4. Comparison of Traditional Adult Education Students and Families First Participants

	FF participants achieved 6th-grade level (*n*)	FF participants achieved 9th-grade level (*n*)	FF participants passed the GED (*n*)	Traditional students achieved 6th-grade level (*n*)	Traditional students achieved 9th grade level (*n*)	Traditional students passed the GED (*n*)
Pre-bonus group	52	27	81	59	94	246
Post-bonus group	112 (115% increase)	123 (356% increase)	189 (133% increase)	45 (24% decrease)	183 (95% increase)	497 (102% increase)

These numbers indicate that more Families First participants made learning gains after the introduction of the completion bonus than traditional students in the same programs who were not eligible for bonus.

Research Findings

The main study findings are summarized as follows:

- The median number of days needed to achieve a learning gain was the same for the pre-and post-bonus groups suggesting that the bonus did not appear to be an incentive to learn at a faster rate.
- Compared to the pre-bonus group, significantly more Families First participants in the post-bonus group made learning gains indicating that the bonus may be an incentive for participants to persist until they have achieved a learning gain.
- Substantially more Families First participants made learning gains after the introduction of the bonus compared to traditional Adult Education students in the same programs who were not eligible for the bonus. Overall, enrollment of Families First participants in Adult Education had not increased.

Conclusions and Implications for Theory and Practice

The data showed that the bonus did not influence the number of days that participants took to make progress. The promise of a bonus was not an incentive to learn at a faster rate. This finding is important for welfare policy because learning takes time and the promise of a bonus does not appear to change this fact. The data did show that the post-bonus group had a significantly larger number of people who advanced a level or passed the GED examination. The benefit of a cash bonus for individuals who are receiving welfare may not be to increase the rate at which participants make progress but to encourage those participants to persist who might otherwise have dropped out. While the completion bonus is only one factor involved in making progress in adult basic education, it may

prove to be an important motivational incentive for those who otherwise might not have persisted in achieving their goal. This study agrees with Cameron and Pierce (1994) who contend that a well-structured bonus program can have a positive effect on learning outcomes. A bonus for learning may be particularly relevant for educational programs that are a part of welfare reform. Further research is needed to understand the relationship of the bonus to persistence in achieving educational goals.

References

Cameron, J., & Pierce, W. (1994). Reinforcement, reward, and intrinsic motivation: A meta-analysis. *Review of Educational Research, 64,* 363–423.

Deci, E., & Ryan, R. (1985). *Intrinsic motivation and self-determination in human behavior*. New York: Plenum.

Delves, D. (1999). Practical lessons for designing an economic value incentive plan. *Compensation and Benefits Review, 61*(1), 50–56.

Hays, S. (1999). Pros and cons of pay for performance. *Workforce, 78*(2), 68–72.

Hill, H., & Pavetti, D. (2000). *Using incentives to promote job retention and advancement: Guidance from the performance improvement industry*. Washington, DC: Mathematica.

Kohn, A. (1999). *Punished by rewards: The trouble with gold stars, incentive plans, A's, praise, and other bribes.* Boston: Houghton Mifflin.

Lee, T., Locke, E., & Phan, S. (1997). Explaining the assigned goal-incentive interaction: The role of self-efficacy and personal goals. *Journal of Management, 23,* 541–560.

Nelson, B. (1994*). 1001 ways to reward employees*. New York: Workman.

Ryan, R., & Deci, E. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist, 55,* 68–78.

Ziegler, M., & Ebert, O. (1999). *Making progress in adult basic education: How long does it take?* Knoxville: University of Tennessee, Center for Literacy Studies.