

Tuition Reimbursement Analysis

Submitted to:

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Executive Summary

A tuition reimbursement program for classes taken at colleges and universities is a benefit available to all employees. It has been in place for several years though largely invisible to management, and has not been systematically studied for its effectiveness.

The program recently started to receive more attention when:

- In December 2000, several employees received reimbursement in excess of the \$7,500 limit and the current tracking system did not catch the problem.
- The school which is attended by approximately 70% of students instituted a large tuition increase which could increase the 2001 program costs by up to 50%.
- Cost cutting measures are being implemented across the company.

Although the company supports the concept of a tuition reimbursement program for employee satisfaction and recruiting, questions have arisen as to its overall value. The purpose of this project is to:

- Determine if the program is meeting stated business goals.
- Identify opportunities to cut costs while still providing a useful benefit.
- Identify opportunities to increase program administration efficiency.

The approach for this project was to first collect data from the tuition reimbursement program for 1999 and 2000. These data were analyzed to quantify participant usage and track where funds were being spent. Several statistical comparison analyses were used to assess whether the program was meeting the stated business goals and adding value. The tuition reimbursement program administration process also was reviewed to determine if it could be made more efficient and effective.

Among the findings, approximately 20% of employees utilized the tuition reimbursement program in both 1999 and 2000. Data analyses showed that the highest use was by hourly employees taking lower level (100-200) classes. This finding was counter to the expectation that the program would be most important to, and thereby most utilized, by professional employees pursuing advanced degrees. Unfortunately, these employees accounted for only ~20% of those using the program. Employee retention also was reviewed. Interestingly, the participants in the tuition reimbursement group had a higher turnover rate than the general employee population. In 2000, 21% of the tuition reimbursement group left the company vs. 15% of the general employee population. Finally, an analysis of job performance by usage suggested no significant differences in those using the program versus similar classified employees not using the program.

Based on the above findings, the currently designed program are not meeting the business goals established. However, because several hundred employees are currently participating in this program, negative employee relations issues must be considered in identifying possible changes.

This project provides recommendations for streamlining program administration and restructuring it to tie more closely to business goals. Among the new measures involve requiring a personal development plan for employees in the program, requiring employees leaving the company to pay back expenses, and directing employees toward more cost effective courses.

If the current program continues to operate in its current state, the expected cost to the company is \$1.2 M for next year. By adopting the new business process, we expect the program cost to be around \$800K, resulting in a \$400K cost avoidance savings. (Note: actual project savings will be determined after using the recommended process for one year.)

1.0 Improvement Opportunity: Define Phase

1.1 Problem and Process Description

Tuition reimbursement for classes taken at colleges and universities is a benefit available to all employees. The program is designed to:

- Support employees in their development to enhance their job performance.
- Prepare employees for continued advancement and promotion.
- Improve retention of employees by supporting their personal development.
- Make the company competitive in recruiting professional employees.

Within the last two months, two things happened which brought increased attention to this program. The program has an annual reimbursement limit of \$7,500/person/year. In December 2000, it was discovered that a number of employees had been reimbursed for more than the allotted amount and the current tracking system did not catch this problem. When this problem surfaced, the total amount spent on the program for the last two years also was identified. At this time, cost cutting measures were being implemented across the company, and because the program was costing close to \$1 million dollars per year it became a target for increased management attention. Moreover, since no measures of effectiveness have been in place, there was no way to judge program value-add.

Additional urgency to review the matter occurred when one of the local Universities, where approximately 70% of program participants attend classes, raised their tuition rates. The increased tuition could result in program cost increases by as much as 50% for the next calendar year.

The process flow for tuition reimbursement administration also was evaluated (see Figure 1 below). The program currently requires approximately 0.75 full-time equivalents (FTE) to administer and process all paperwork. As may be seen in the flow chart, no safeguards have been built into the system to ensure that employees do not exceed the annual spending cap.

The process was redesigned in early 2000, but is still paperwork intense and primarily completed by hand. At present, the only computerization is the entry of the documentation of completed classes into the computerized training tracking system, and this is not always done in a timely manner.

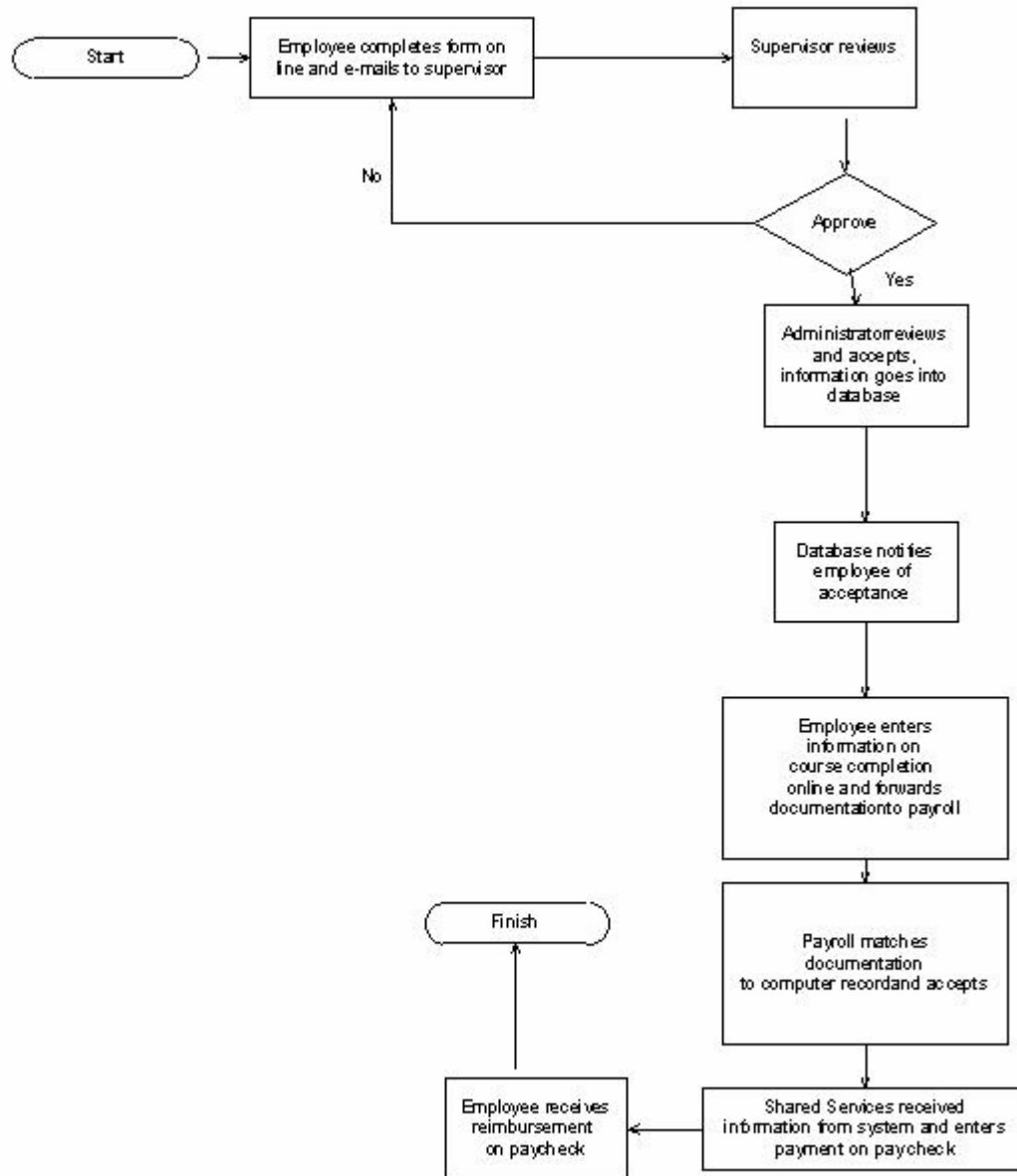


Figure 1. Tuition Reimbursement Process Flow Chart

This report summarizes a six-sigma problem solving approach to evaluate the value of the existing program and to provide recommendations to better align the program with business objectives. Prior to this analysis, most people in the Human Resources department believed that measurement of the effectiveness of certain benefits programs was limited to identifying the number of users. A higher percent of employee users was seen as an indication of a successful benefit. Benefits programs have stated business goals, but in most cases, efforts have not been made to determine if these goals are being met. Thus, this project also provides an example of how benefits programs may be systematically analyzed using a Six Sigma problem solving approach.

1.2 Key Measures for Evaluating Project Success

The goals for the tuition reimbursement program may be turned into three key participant-related metrics and one key company-related metric. The key participant metrics are:

1. Participants' improved job performance.
2. Participants' promotions.
3. Retention/turnover of participants

From the company perspective, a key issue is program value which represents the quality or usefulness of the benefit relative to the program costs. The company recognizes the value of having a tuition reimbursement program for job enrichment and recruitment, but would like to find opportunities to reduce the total costs to administer and fund the program. The cost issue is particularly important because the Local University where most students attend classes has significantly increased tuition. Thus, the intent of the project is to provide recommendations to improve the program, but not eliminate it.

1.3 Project Scope

Although tuition reimbursement affects the entire company, the team focused its analysis on employees from three facilities. The team hopes to ultimately use the results of this study to support company-wide changes to the program.

2.0 Current State: Measure Phase

The current tuition reimbursement policy provides that employees may attend any approved college or university (a school accredited by one of the six regional accrediting bodies) and be reimbursed up to \$7,500/year for the cost of tuition and fees. The course of study must be pre-approved; however, as a practical matter, as long as the university program accepts a person, the manager usually signs off on approval with little or no discussion with the employee as to its relevance to their current job or future opportunities within the company.

To measure current program effectiveness, data were compiled for all tuition reimbursement program participants for 1999 and 2000. The data included the participant's name, job title, date of hire, date of termination (if applicable), college attended, course code, course start date, course end date, and cost for each class taken.

Although the majority of the data were available in the training tracking database at the start of the project, an initial review showed that approximately 20% of it had not been entered by the start of the project. Since paper records existed for this data, they were located and entered into the computerized system to obtain a comprehensive data set.

2.1 Current Performance Level

In both 1999 and 2000, approximately 20% of employees used the program. To evaluate the effectiveness of program performance for these participants, we first established criteria for a defect. A defect was defined as an employee using the tuition reimbursement program that left the company, received a disciplinary action and/or gotten a performance rating of Below Expectations. In contrast, an employee who is still with the company and received a promotion and/or a performance evaluation of Meets Expectations or above is considered a success. Only one defect was counted per individual. All employees who participated in the program in both 1999 and 2000 were included in the population base. Using these criteria, our quality performance level is 70%.

In terms of program costs, the total cost for 2000 was approximately \$800,000 for ~300 students. After factoring in growth and tuition increases, the projected costs are expected to rise to over \$1.2 million in 2001.

2.2 Key Input and Output Variables:

For this project, several key Y variables were analyzed including participant performance from job evaluations, employee retention, and total program cost. For each of these variables, several stratification variables were identified to better understand any lack of performance issues. These stratification variables include employee classification (Hourly, Semi-professional, Professional), course selected, tuition costs per course type, and costs per employee. The tuition process administration method also was considered a key factor affecting performance. These administration methods include issues such as how reimbursement requests are approved and how costs are tracked.

2.3 Performance Goals:

The overall goal of the project was to develop recommendations that maintained the intended objectives of the program while reducing overall program costs, or at least limit the potential escalation that could occur with University tuition increases. In addition, a revised program should result in measurable improvements in job performance and retention. The goal of a new process is to have a quality performance level greater than 90%.

3.0 Analysis

3.1 Qualitative Process Analysis

The tuition reimbursement program has a set of desired goals. These goals include support for employees to enhance their job performance, prepare employees for continued advancement and promotion, improve retention of top employees, and make the company competitive in recruiting professional employees. A cause and effect diagram was developed to identify possible reasons for not meeting these goals (see Figure 2).

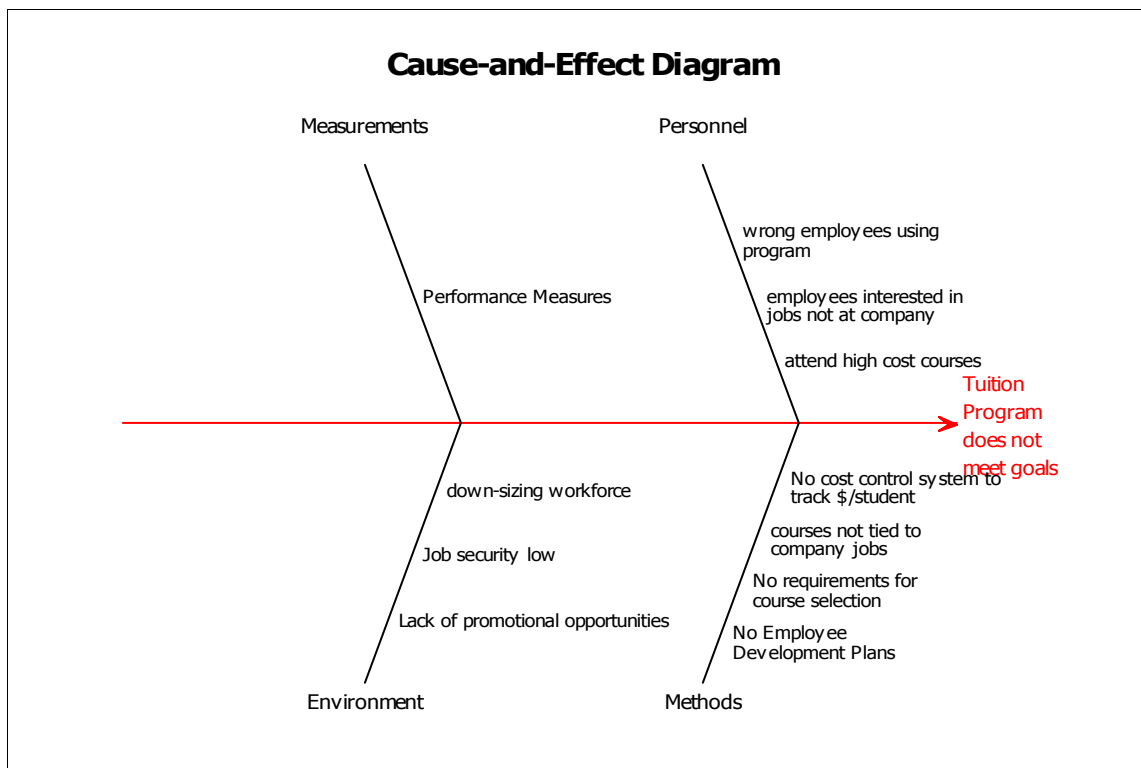


Figure 2. Cause-and-Effect Diagram for Tuition Reimbursement Program

The current tuition reimbursement administration process is paperwork intense and costly to administer because of the employee time that must be devoted to this task. In addition, there is nothing within the current administration system to ensure that an employee will not receive more reimbursement than he/she is entitled to under the program policy. In fact, this happened in both 1999 and 2000. The system does not provide for any type of reporting or regular cost tracking. The dollars spent on the program are not part of any department's budget but are assigned to overhead. This has tended to make the spending somewhat invisible because no individual sees it regularly or is accountable for managing the level of spending.

3.2 Data Analysis

To evaluate the effectiveness of the program, we examined several variables including participant utilization and performance, employee retention, and total program cost. The following subsections provide analysis for each of these variables.

Participant Utilization

We stratified the participant utilization data by employee classification using the following three groups: Hourly, Semi-professional, and Professional. Analysis showed that the highest utilization was by Hourly employees while only 23% of the participation came from Professional staff. In addition, approximately 60% of the classes taken were lower level courses (100-200), ~25% were upper level (300-400) and ~15% were graduate classes. Currently more than half of the

employee participants are studying business or management even though the biggest need within the company is for engineers and other technical support personnel (based on jobs posted within the last 12 months).

Although the expectation prior to analysis was that the primary users of the program were professional staff pursuing advanced degrees, this did not prove to be true. Rather, most of the participants are hourly employees taking lower level classes. Although it is probably very beneficial to these employees personally to take these classes, the company is in a down-sizing mode and has little need and few positions for people to advance from the Hourly to the Semi-Professional positions for which these lower level classes might qualify them. In addition, many of the courses taken by the Hourly Employees were in degree programs in which no job position is available within the company (e.g., Hourly employee pursuing a Nursing Degree). Finally, although the company is seeking more engineers and technical support staff, the majority of the participants taking higher level (300-400) courses are pursuing degrees in business. Thus, even when they complete those degrees, their majors do not match the majority of position requirements.

Performance and Promotion Analysis

To assess the program's effectiveness in improving performance and promotions, a special study was conducted. A stratified random sample was selected from the participant group. The stratification was based on employee level -- Hourly, Semi-professional, and Professional. A matched random sample was selected from non-participating employees. The sample was matched for job title so that any salary differences were not due to differences in job duties. However, the sample was random within the job title and classification. Measures selected to assess performance were ratings from the performance evaluation system for the past two years, current salary level, and disciplinary action. The measure for assessing whether an employee had been promoted was number of promotions in the past three years.

Data was gathered for each of the participants and control group members for performance evaluation, salary, promotions, and disciplinary action. Performance evaluation, salary and disciplinary action were all used to measure performance effectiveness because the performance evaluation system does not tend to be robust and salary is considered to be a better measure of performance in many cases; number of disciplinary actions is also considered important, particularly when reviewing performance.

A statistical comparison test was performed for each variable. Results are shown in Table 1. No statistically significant differences were found in the Hourly or Professional groups. A statistically significant difference was found for performance in the Semi-Professional group with the participants having slightly higher performance ratings than the control group.

	% of Participants	\$ Spent/Level	Participant Control Group Average Performance Rating	Average Matched Random Sample Performance Rating
Hourly	42%	312	3.30	3.37
Semi-Professional	34%	423	3.27	3.01
Professional	23%	315	3.50	3.77
Total	100%	1050		

Table 1. Performance Comparison by Group

Employee Retention

Most of the defects (as defined earlier) were related to employee retention. The turnover rate for program participants in 2000 was ~21% compared with the general employee population turnover of 15.5% (See Table 2). This is troubling as one of the intents of the program is improve employee retention. The total spent on educational assistance for these participants who left the company is approximately \$300,000 per year.

	% of Participants	\$ Spent/Level	Turnover Rate
Hourly	42%	312	21%
Semi-Professional	34%	423	18%
Professional	23%	315	26%
Total	100%	1050	21%

Company Overall 15.5%

Table 2. Employee Retention

Cost Analysis

In reviewing participant cost data, course data were reviewed to determine the effect of the school chosen on total costs. Since there are numerous community colleges available in the area, those students taking lower level classes (100-200) could take those classes at community colleges. Data analysis showed that in 2000, 649 lower level classes were taken at Universities with an average cost of \$721/class and 432 were taken at community colleges with an average cost of \$134/class. Overall, if all lower level classes in the last two years had been taken at community colleges (as opposed to universities and private schools), employees could have received the same classes for more than \$600,000 in savings.

Currently, approximately 70% of all participants take classes through the one University. This University recently raised their tuition. In addition, there is great concern that tuition costs will further increase as additional employees currently pursuing admission are accepted and start

classes through this university. Although the exact increase in costs can not be calculated at this time because the number of employees attending the school is subject to change, using past participation as a guide the increase in cost for 2001 could be an additional 50%.

As shown above, these results indicate that the program is not meeting its goals. The experiment found no significant difference in any group for salary, promotions or disciplinary actions. No significant difference was found for the Hourly or Professional group for Performance ratings though some increases among Semi-Professionals verses others not participating. Most significantly, the turnover for the participant group was actually higher than for the general population, and this turnover has increased significantly within the last 14 months. The current program does not require the employees to stay for a specified time after completion of a class or repay to company for the costs, so there is no negative financial impact on the employee if they leave after completing a course or a degree.

4.0 Recommendations: Improve Phase

Several recommendations were developed from this analysis. The first set relate to program administration and do not affect employees. The second set relate to program and course eligibility. Here, two alternatives were considered.

Program Administration Improvements

The program administration of the tuition reimbursement program should be automated and web based. The system should automatically track cost per participant and stop reimbursement payments when the participant reaches the established annual limit. In addition, a monthly report showing all activity will automatically be generated.

Program and Course Eligibility Improvements

Two additional recommendations related to participation and course selection were also evaluated and are discussed below.

Option 1:

A perception exists (although unproven) that this program is necessary to recruit professional staff. Thus, one option is to maintain the program for professional level staff only. The process for approval of a course of study should be tied to an individual development plan and should be linked to providing employees with the skills to meet identified current or future business needs. It could further be restricted to professional employees performing at the Exceeds Expectations or Outstanding level to limit costs. Since Professional employee participation in the last two years has accounted for only 30% of costs, this would result in 70% savings over projected program cost without the change. If additional savings were desired, the annual reimbursement level could be lowered to \$5000/year/employee. Total savings in 2001 would have to factor in the cost for classes already taken or in progress under the existing program. For 2001, projected

cost for this option (including coverage for the existing program YTD) would be \$685,000 (at \$7500/employee) or \$570,000 (at \$5000/employee).

Although this would meet perceived needs, it could also insert a division in the work force and could have a negative impact on employee relations and create barriers between people working together.

Option 2:

The other option under consideration is summarized below.

1. All lower level courses would be reimbursed at the community college cost rate. The employee could take a course at any approved school, but would only be reimbursed for what the course would cost if it were taken at a community college. This would have resulted in savings of approximately 20% per year based on the previous two years cost data; however, because many of the on-going participants have now completed their lower level classes, the cost savings are projected to be 10%.
2. Eligibility for tuition reimbursement should be tied to the employee's personal development plan and strategic business needs. Only those plans showing a clear link to strategic business needs and a career path that relates directly to and is supported by the course of study would be approved. The employee's department manager would be required to review progress with participating employees and determine if the employee was approved to continue on an annual basis.
3. The amount of tuition reimbursement should be capped at \$5,000/employee/year for classes directly related to their current position (per the personal development plan) and \$3,000 for classes related to a position within the company (per the personal development plan). Based on the last two years, \$5,000 would have resulted in a full reimbursement for 80% of participants. Savings would have been approximately \$150,000 in both 1999 and 2000. A student could attend a full-time University for two semesters and stay below the \$5,000 cap.
4. Reimbursement will be at 100% for classes directly related and immediately applicable to their current position and at 50% for classes that are preparing the employee for other positions within the company. This must be demonstrated in the employee's personal development plan.
5. Employees must sign an agreement that if they leave work within 12 months (rolling 12 months) of being reimbursed, then the employee will repay the money for the class. If an employee is terminated due to a reduction in force, there would be no requirement to repay the company.

The projected cost of this option for 2001 is \$800,000 (assuming the number of new participants is approximately equal to the pattern of the past two years). However, with the proposed controls in place, this cost may be less. Without the changes in the program, tuition increases could push the program cost to approximately \$1.2M.

Recommendation: Option 2 is recommended for implementation in 2001.

(Note to Reader: If possible, please add an improvement recommendation verification study to project the impact in terms of quality performance level such as defect level, processing time, etc. This study might involve running the new recommendations for 30 or 100 samples or perhaps over some specified period of time such as 1 or several months. For example, these recommendations could be used in a 4 month pilot program and the quality level in terms of performance and retention could be re-evaluated to show the improvement.)

5.0 Process Monitoring and Control

During 2001, program participation and costs can be controlled by installing some business rules in training tracking database (i.e., limit overpayments and control spending on lower level courses). In addition, the program expects greater management control by requiring participants to complete a personal development plan as a part of the approval process that puts more accountability on individual managers to more closely monitor how the course of study helps meet business needs.

The tuition reimbursement cost center will be reported monthly to the department manager of the administering department. Spending will be monitored and managed. Regular reports of total spending will be made to the HR Director.

Since the policy governing tuition reimbursement is company wide, implementation of any changes will result in a temporary difference in benefit levels between facilities. Utilizing 2001 as a transition year will provide time to evaluate data from other facilities and an overall division plan to address tuition reimbursement can be developed.

6.0 Conclusion

Questions recently arose regarding the tuition reimbursement benefit program. The program is utilized by approximately 20% of the employees each year and is projected to cost the company in excess of \$1 million dollars a year. However, it has never been systematically analyzed to understand utilization, costs, or to determine if the program is meeting stated business goals. Additionally, a tuition increase from the school attended by approximately 70% of participants makes projections for spending in 2001 to increase significantly.

Data was collected for 1999 and 2000. Participant usage was weighted heavily toward the hourly population and the majority of classes taken were lower level (100-200). Most participants have opted to take their classes at more expensive private schools which have significantly increased the cost of the program. Statistical analysis revealed that the current program does not meet established goals for performance improvement or increased promotions. In addition, the process used to administer the program is paperwork intense and requires 0.75 FTE to administer. The program has not been tied to meeting business needs and employees have been allowed to pursue courses of study leading to degrees that do not match company needs.

Recommendations were made to revise the tuition reimbursement policy to control costs for 2001 and implement a process to more closely tie approved courses of study to business needs. The potential cost avoidance savings is expected to be \$400,000 with actual savings to be determined after one year of operation of the revised program.