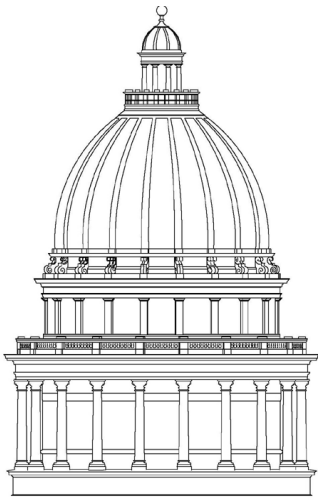
REPORT TO THE

UTAH LEGISLATURE

Number 2009-15



A Performance Audit of Career and Technical Education Costs

November 2009

Office of the
LEGISLATIVE AUDITOR GENERAL
State of Utah

STATE OF UTAH
Office of the Legislative Auditor General

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AUDITOR GENERAL

November 11, 2009

TO: THE UTAH STATE LEGISLATURE

Transmitted herewith is our report, **A Performance Audit of Career and Technical Education Courses** (Report #2009-15). A digest is found on the blue pages located at the front of the report. The objectives and scope of the audit are explained in the Introduction.

We will be happy to meet with appropriate legislative committees, individual legislators, and other state officials to discuss any item contained in the report in order to facilitate the implementation of the recommendations.

Sincerely,

John M. Schaff, CIA
Auditor General

JMS/lm

Digest of A Performance Audit of Career and Technical Education Costs

Chapter I: Introduction

Legislators asked that we compare the cost of career and technical education at Utah's Applied Technology Colleges (ATCs) and two-year colleges. Specifically, we were asked to repeat the analysis provided in a 1995 audit titled *A Performance Audit of the Applied Technology Education Programs*. That earlier report used the cost per student clock hour as the primary basis for comparing program costs among two types of post-secondary institutions. Legislators also asked us to address whether funds for career and technical education are distributed in an equitable manner.

Chapter II: ATCs Have Lower Instruction Costs Than Two-Year Colleges

Total Cost of Instruction is Lower at ATCs than at Colleges. Our results show that for six programs examined, the total cost per student hour of instruction was lower at the ATCs than at the colleges.

Type of Institution	Accounting	Automotive Technician	Building Construction	Drafting	Information Technology	Welding
ATCs	$12.61	$12.17	$13.81	$9.65	$10.08	$10.53
Two-Year Colleges	$20.97	$24.97	$22.26	$27.37	$15.56	$29.45

The total cost of instruction is comprised of two components: (1) the direct cost of instruction, and (2) the cost of overhead.

ATCs Have Lower Direct Costs of Instruction. ATCs have lower direct costs mainly because of the lower compensation paid to their faculty and the higher classroom teaching workloads. Class sizes also impact the average direct cost per student clock hour, but data comparing ATC and college class sizes was not readily available.

ATCs Have Lower Overhead Costs than Colleges. Overhead costs include physical plant, institutional support, academic support, and student services. Higher overhead costs at colleges are largely due to the more comprehensive services provided to students. College students pay higher amounts of tuition and fees, which help cover the college's higher costs.

Our Results Differ Significantly from Prior USHE Cost Comparisons. Our audit produced a different set of results than

those described in a 2007 Utah System of Higher Education (USHE) study. One reason for the difference is that the USHE study overstated the number of hours of instruction offered in college-based career and technical education courses. By overstating the number of hours students are enrolled in class, the study understated the cost per hour of instruction.

Chapter III: Some Institutions Receive Funding for Instruction They Do Not Provide

Two ATCs Receive Funding for Instruction They Do Not Provide. Two ATCs have developed partnerships with private businesses that allow them to increase their membership hours and their funding, while bearing only a portion of the cost of instruction. Last year, one such partnership earned the Southwest ATC $521,000 in appropriations although the cost to the ATC was only $67,000.

School Districts Receive Funding for Students Educated by ATCs. School districts receive funding for their secondary students enrolled in ATC programs even though the districts provide no instruction. For the 2007-2008 school year, school districts received about $5 million in student membership funding for students who were simultaneously counted as earning ATC membership hours.

Recommendations:

1. We recommend that the UCAT Board of Trustees exercise greater control over outsourced instruction by:
   - eliminating all outsourcing of instruction to private organizations, or
   - developing policies that clearly identify the conditions under which ATCs may outsource student instruction.

2. We recommend that the UCAT Board of Trustees clarify its policies regarding program exemptions by:
   - eliminating all exemptions to UCAT policies, or
   - establishing clear policy regarding the conditions under which exemptions will be granted, including the time limits placed on such exemptions.

3. We recommend the Legislature consider adjusting school districts funding for students who are educated at ATCs. Options include:
   - reducing the state funding school districts receive for students who attend ATCs. This change would require amending ***Utah Code*** 53A-17a-114(2).
   - allowing school districts to continue to receive full state funding for students who attend ATCs, but having school districts pay the normal ATC tuition for their students who attend ATCs. This change would require amending ***Utah Code*** 53B-2a-106(1).

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Chapter I
Introduction

Two types of institutions within the Utah System of Higher Education offer career-specific training in fields such as welding, automotive repair, and computer-assisted drafting. These two types of institutions are (1) the colleges and universities of the Utah System of Higher Education, which mainly provide for-credit instruction; and (2) Applied Technology Colleges (ATCs), which provide not-for-credit instruction. There are eight ATCs which together make up the Utah College of Applied Technology (UCAT).

Utah's for-credit institutions (herein referred to as colleges) are governed by the Utah Board of Regents. The UCAT receives direction from the UCAT Board of Trustees.

Both types of institutions aim to meet the state's need for a highly skilled workforce. However, colleges focus more broadly on providing students with a comprehensive education while ATCs focus more narrowly on helping students quickly obtain the skills they need to get a job. In recent years, questions have arisen about which type of institution provides the lowest-cost career and technical education (CTE). Comparing costs is challenging because ATCs and for-credit institutions measure student instruction differently.

Colleges focus on providing a comprehensive education while ATCs focus on skills training.

Legislators asked that we apply the same approach to comparing costs that is used in a 1995 report titled: *A Performance Audit of the Applied Technology Education Programs.* During that earlier audit, we used the cost per student clock hour as the primary basis for comparing program costs. As with that earlier audit, we did not evaluate educator credentials, long-term value of each institution's program to students, and other qualitative factors that might affect program costs. Legislators also asked us to review whether the state's funds for career and technical education are being distributed in an equitable manner.

ATCs and Colleges Use Different Measures of Student Instruction

As mentioned, the ATCs and colleges use different measures of student instructional activity. At ATCs, courses are self-paced and are taught on an open-entry/open-exit basis. As a result, ATCs measure student activity in terms of the time students are scheduled to receive instruction, or membership hours. In contrast, most college instruction is scheduled for set time periods throughout the academic calendar. As degree-granting institutions, colleges measure student activity in terms of credit hours for courses taken.

ATCs Measure Student Enrollment with Membership Hours

Membership hours represent 60 minutes of scheduled instruction at an ATC.

According to the UCAT membership hour policy, a membership hour is "a 60-minute period of time in which an enrolled student is participating in instructional activity with a UCAT campus." This policy goes into further detail and requires that instructional activities be carried out by an instructor who has an employment or contractual relationship with an ATC.

Membership hours include many different types of instructional activities. During our site visits, we observed a variety of activities where students were working on engines, styling hair, completing workbooks, and attending lectures. Since all of these activities are supervised by an instructor, ATCs count them as membership hours.

In normal years, when funds are available to cover the cost of growth, the Legislature has used the count of membership hours as the basis for its appropriations to the UCAT system. In fact, the link between funding and membership hours is expressed in the UCAT policy that states, "Membership hours are a performance indicator measuring campus instructional resource commitment." In the past, new legislative appropriations have been based on the growth in membership hours generated by the UCAT system as a whole. In addition, the Legislature often approves special funding for capital facilities and certain program costs.

Colleges Measure Student Enrollment with Credit Hours

Because the focus of a college education is to earn a two- or four-year degree, colleges measure student activity in terms of credit hours earned. However, a credit "hour" is not really as much a measure of time as it is a measure of educational accomplishment. The number of credit hours awarded may vary depending on the course of instruction. Typically, a one-credit-hour course will involve 50 minutes of instruction per week for a 15-week semester. However, some career and technical education courses, especially those in heavy trades historically described as "vocational education," require a much larger on-site time commitment, both in the lab and in the classroom in order to earn a single credit hour.

Colleges use credit hours which are the equivalent of 50 minutes of scheduled instruction each week during a semester.

One problem that is a bit challenging to budget analysts and institutional officials is how to compare the cost of similar programs offered at ATCs and colleges. Because the two institutions do not use a common measure of student activity, it is difficult to find a common basis for measuring costs. Some researchers in Utah and elsewhere have relied on a conversion factor of 900 membership hours for 30 credit hours. During our 1995 audit of applied technology education, we found too many problems presented by the use of a single conversion factor. Instead, we measured each college's "student clock hours," or the time students spend in classroom instruction, as the basis for measuring costs. Our student clock hour is essentially the same as the student membership hour. Legislators asked that we update the cost-per-student-clock hour analysis from our 1995 audit and provide a more recent comparison of ATC and college costs.

Because ATCs and colleges use different measures of enrollment, it is difficult to find a common basis for measuring costs.

Audit Scope and Objectives

This audit was requested in 2008 by the two chairs of the Executive Appropriations Committee. Some of the issues raised in the original audit request were resolved through the passage of House Bill 15, *Career and Technical Education Amendments*, during the 2009 Legislative Session. Based on the legislative changes, we limited the scope of the audit to the following questions:

1. How does the cost of education at the applied technology colleges compare to the costs for similar course offerings at the state's institutions of higher education?

2. Are funds for applied technology education distributed in an equitable manner?

The first question regarding the cost of applied technology education is addressed in Chapter II. Issues related to the state's approach to distributing funds for vocational education are described in Chapter III.

Chapter II
ATCs have Lower Instruction Costs Than Two-Year Colleges

Utah's applied technology colleges (ATCs) have a lower cost of instruction than the state's two-year colleges. We reviewed the cost of six career and technical education (CTE) programs offered at the state's ATCs and two year colleges. We found that the total cost per hour of instruction was lower at the ATCs than at the colleges. The total cost is comprised of two components: (1) the direct cost of instruction and (2) the cost of overhead. We found that the direct cost of instruction is lower at ATCs because colleges tend to have higher instructor salaries and lower classroom teaching workloads. ATCs also have lower overhead costs than colleges.

The cost per hour of instruction was lower at the ATCs than at the colleges.

Our results differ from another study performed by the Utah System of Higher Education (USHE). That study, performed in 2007, compared the cost of instruction at the Salt Lake Community College with that of the Salt Lake Tooele ATC. In order to calculate the cost per student clock hour, the USHE analysts relied on a conversion factor to estimate the number of clock hours generated for each credit hour. However, we found instruction time varies too much from program to program to make the use of a national conversion factor accurate. Instead, our analysis is based on the actual time CTE students were enrolled in class.

Total Cost of Instruction Lower At ATCs than at Colleges

Legislators asked us to compare the cost of instruction at the state's ATCs to that of the two-year colleges. They specifically asked that we apply the same methodology used in our 1995 audit which meant the basis for comparison would be the cost per student clock hour. A student clock hour is the time a student is enrolled in a college or ATC class. As in 1995, we compared the cost of similar programs offered at both ATCs and colleges. The total cost of instruction per student clock hour is shown in Figure 2.1.

Legislators asked that we repeat the cost analysis used in a 1995 audit that compared programs in terms of the cost per student clock hour.

Figure 2.1 Total Costs Per Student Clock hour. The total cost is comprised of the direct cost associated with providing classroom instruction plus an allocation of overhead costs.

Campus	Accounting	Automotive Technician	Building Construction	Drafting	Information Technology	Welding
BATC	*	$14.20	$13.94	$7.15	$11.51	$11.27
DATC	$9.83	9.88	*	11.67	8.77	10.63
DXATC	*	*	11.27	9.18	*	8.07
MATC	*	10.80	19.01	*	10.02	7.64
OWATC	13.02	*	14.86	10.61	10.39	15.15
SLTATC	*	26.20	*	*	9.12	13.58
SWATC	*	11.64	11.31	9.88	9.30	8.80
UBATC	14.38	11.13	*	15.42	17.26	9.41
All ATCs	**$12.61**	**$12.17**	**$13.81**	**$9.65**	**$10.08**	**$10.53**
CEU	$62.81	$22.25	* *	$46.56	$42.50	$40.22
SLCC	17.42	24.10	$19.72	21.02	12.63	21.52
Snow	32.48	27.87	26.99	48.54	27.70	43.13
All Colleges	**$20.97**	**$24.97**	**$22.26**	**$27.37**	**$15.56**	**$29.45**

* *No comparable program could be evaluated*
* * *Actual student schedules could not be obtained*

Total costs were generally higher at colleges because of higher direct costs and overhead costs.

Figure 2.1 shows the total cost of providing instruction for six career and technical education programs at the state's eight ATCs and three colleges. In each case, the average cost was higher at the colleges than at the ATCs. For some programs, such as welding and drafting, the average cost of the college programs was three times that of the ATCs.

As mentioned, the total cost of instruction is comprised of two components: (1) the direct cost of instruction and (2) the cost of overhead. They are described in the following sections.

Direct Cost of Instruction Is Lower at ATCs than Colleges

Differences in direct costs can be attributed to differences in compensation, workloads and class sizes.

ATCs have a lower average direct cost of instruction than the colleges. The direct cost of instruction includes all costs directly associated with holding class. It is comprised mainly of the instructor's salary and benefits, but for some programs it also includes the cost of maintaining the laboratory where students can receive hands-on training. Because faculty compensation is the largest direct cost of providing instruction at ATCs and colleges, we reviewed differences in compensation amounts and classroom teaching workloads to better understand the cost differences we found. Class sizes also impact the average direct cost per student clock hour, but

data to compare ATC and college class sizes was not readily available because ATCs could not produce information regarding their class size.

ATCs Have Lower Direct Cost Per Student Clock hour

The direct cost per clock hour is found by dividing the direct costs associated with operating a program by the number of hours in which students are scheduled to be in class. Each of the institutions involved in our study provided all of the data used in the analysis. We found that institutions vary greatly in what programs they offer and how they account for costs and instructional activity. As explained below, we limited our analysis to six programs that followed a similar curriculum.

We reviewed six programs that are offered at most of the institutions we reviewed.

We chose the following programs for review because they were commonly offered, and we felt they provided reasonable comparisons.

- Accounting
- Automotive technician
- Building construction
- Drafting
- Information technology
- Welding

Figure 2.1 shows our results. The weighted average direct cost of instruction for all six programs was lower at the eight ATCs than at the three two-year colleges.

Figure 2.2 A Comparison of the Direct Cost of Instruction for Six Career and Technical Education Programs. The direct cost per student clock hour represents the costs associated with personnel, current expense and capital equipment costs.

Campus	Accounting	Automotive Technician	Building Construction	Drafting	Information Technology	Welding
BATC	*	$8.77	$8.61	$4.41	$7.10	$6.96
DATC	$5.20	5.23	*	6.17	4.64	5.62
DXATC	*	*	7.77	6.33	*	5.57
MATC	*	6.67	11.73	*	6.19	4.72
OWATC	6.38	*	7.28	5.20	5.09	7.43
SLTATC	*	10.52	*	*	3.66	5.45
SWATC	*	7.46	7.25	6.33	5.96	5.64
UBATC	8.56	6.62	*	9.18	10.27	5.60
All ATCs	**$6.59**	**$6.93**	**$8.08**	**$5.51**	**$5.47**	**$6.04**
CEU	$22.04	7.81	* *	16.34	14.91	14.11
SLCC	8.26	11.42	9.34	9.96	5.99	10.20
Snow	12.89	11.06	10.71	19.26	10.99	17.11
All Colleges	**$9.34**	**$10.70**	**$9.82**	**$11.90**	**$6.88**	**$12.18**

* *No comparable program could be evaluated*
* * *Actual student schedules could not be obtained*

ATCs typically have lower direct costs, but some college programs produced different results.

Even though average program costs are lower at ATCs than at colleges, there is some overlap between the two types of institutions. For example, one UCAT building construction program cost more than similar programs at two-year institutions. Some of the reasons for the differences seen in Figure 2.2 will be discussed in the next section, but first, we discuss the methods used to obtain our data.

We Strived for Program Comparability. We tried to ensure comparability of programs among institutions by examining both the classification of instruction program (CIP) codes and the program content described in each institution's course catalog. Both ATCs and colleges use CIP codes to classify programs according to nationally accepted definitions. In some cases, we combined ATC programs to make a better comparison to college programs. For example, we combined cabinet making with masonry and carpentry programs to make better comparisons with college building-construction programs.

To provide greater comparability, prison and continuing education courses were excluded.

We also excluded some classes for the sake of comparability. For example, prison populations have access to some of the six programs at two colleges and an ATC. Most institutions do not serve this population, so costs and student clock hours were omitted from this analysis. A similar adjustment was made for the Salt Lake Community College which was the only college to offer continuing education courses in some of the six programs.

Program Costs Were Provided by Institutions. We obtained program costs from standard institutional reports or audited financial statements. For both ATCs and colleges, we only included budget-related program costs, which are supported by ongoing appropriations. Any self-sustaining program costs, such as custom fit training and concurrent enrollment at high schools, were excluded.

Student Clock Hours Were Used as Basis for Evaluating Program Costs. In accordance with the audit request, we compared costs on a per-student-clock-hour basis as we had done in our 1995 audit of career and technical education. Student clock hours were readily available for ATCs, but required calculation for colleges.

Student clock hours were readily available for ATCs but had to be calculated for colleges.

For ATCs, student clock hours are represented by "membership hours" – the measure of student activity used by ATCs. A membership hour is defined as a 60-minute period during which a student is scheduled to be in class. ATC membership hours are regularly reviewed by a UCAT auditor, which gave us some assurance that they were accurate.

For colleges, student clock hours were calculated for each class as the time students were scheduled to be in class. We obtained class schedules and enrollment reports for the six programs being reviewed at the colleges. However, some circumstances required us to make adjustments to the actual data. For example, instruction time during internships and Internet courses were included in our analysis even though such courses have no set schedule. All estimates were based on the average instruction time for similar courses for which data was available.

Once we identified the costs and applied them to the student clock hours, we could compare the costs of individual programs at all institutions, as shown in Figure 2.2. The next section describes some of the reasons for the differences in program costs.

Lower Faculty Salaries and Greater Classroom Teaching Workloads Contribute to Lower ATC Costs

Faculty compensation is by far the greatest instructional cost at both ATCs and colleges. For the six programs we reviewed, personnel costs account for 87 percent of direct costs at ATCs and 94 percent at

colleges. Lower compensation costs at ATCs are an important factor leading to the differences in the direct program costs shown in Figure 2.2. Differences in faculty compensation per student clock hour arise from both lower pay rates and greater classroom teaching workloads at ATCs. Varying class sizes may be an important factor as well.

ATCs Pay Lower Salaries than Colleges. We compared faculty compensation for three of the six programs in our cost study: the automotive technician, drafting, and welding programs. We found that the salaries and benefits of the ATC instructors were lower than those teaching at the colleges.

On a per hour basis, compensation for ATC instructors is lower than for college instructors.

Because there are so many different faculty work schedules, we compared compensation on an hourly basis. Full-time instructors may work 9-, 10-, or 12-month contracts. Therefore we identified the amount each institution paid in salaries and benefits during the 2007-2008 school year and divided those amounts by the total hours worked by faculty during the year. The results for three CTE programs are shown in Figure 2.3.

Figure 2.3 Instructor Compensation Higher at Colleges than at ATCs. The compensation paid to full-time instructors for auto technician, drafting and welding programs were compared. The average salary and benefits paid by colleges were higher than those paid by ATCs.

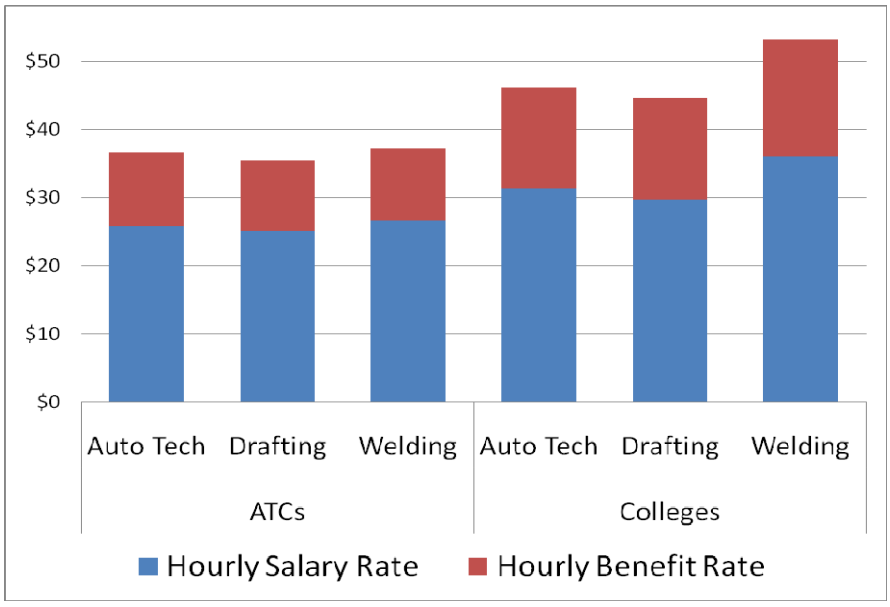


Figure 2.3 shows that the college instructors in all three programs received higher salaries and benefits than ATC instructors. The largest

difference was for welding instructors. The salaries for welding instructors at the colleges were $7 more an hour than those paid to ATC instructors. Our salary data only includes the salaries and benefits of full-time instructors. Both the colleges and ATCs also employ adjunct faculty who tend to be paid less than full-time instructors and receive few, if any, benefits.

Classroom Teaching Workloads are Heavier at ATCs than at Colleges. Another important difference between ATCs and colleges is the amount of time faculty spend in classrooms. ATCs typically require their full-time faculty to spend 30 hours per week in a classroom, whereas full-time college faculty are required to spend less time in the classroom. While not included in our analysis, potential impacts of office time, adjunct faculty, and 50-minute credit hours on instruction time were also considered.

Full-time college faculty are required to spend less time in the classroom than ATC instructors.

ATCs and colleges have different teaching models. Most ATC programs operate on a set schedule. For example, at the Bridgerland ATC (BATC), regular full-time instructors provide six hours of classroom instruction for five days each week. In contrast, Salt Lake Community College (SLCC) instructors teach unique course schedules consisting of regular classroom instruction and laboratories that require variable amounts of instruction time.

We identified the number of hours full-time instructors spent providing classroom instruction for six programs at BATC and SLCC. The data in Figure 2.4 is based on a review of course schedules for the 2007-2008 school year and represents the amount of scheduled class time for a typical five day work week.

Figure 2.4 Hours Each Week That Faculty Spend in the Classroom Providing Instruction. Full-time faculty at BATC spend six hours a day, five days a week providing classroom instruction. In contrast, some SLCC instructors spend less than half that amount of time in class.

Programs	BATC	SLCC
Accounting	30.0	13.2
Automotive Technician	30.0	23.3
Building Construction	30.0	26.9
Computer Information Technology	30.0	13.2
Drafting	30.0	19.0
Welding	30.0	25.6

Courses taught in a laboratory environment generally require more instruction time than courses taught using lecture-style presentation.

While instructors' teaching time is consistent at BATC, it is inconsistent at SLCC. The figure shows that automotive technician, building construction, drafting and welding instructors at SLCC spend more time teaching than full-time faculty in the accounting and computer information technology programs. The main difference is that the traditional vocational-type career and technical education require more laboratory time with faculty. In contrast, academic-type career and technical education rely more on lecture-style presentations with little laboratory time. The distinction between different types of career and technical education is discussed more fully later in this chapter.

In addition to classroom instruction, instructors also work with students outside of class during their office time. Policies regarding office time did not specify how much time instructors should spend with students and actual time is not tracked. Therefore, this time was not included in our analysis. Figure 2.4 shows that some subjects like welding have similar class time requirements while others like accounting are very different. Instruction carried out during office time may make up more of the difference in programs like accounting.

The impact of excluding adjunct faculty workloads could not be accounted for. Both institutions employ some part-time, adjunct instructors. Data showing how much of their time was spent in office time was unavailable. However, including these faculty in our analysis may have reduced the difference in workload because these staff focus mainly on classroom instruction and less on other college duties.

State Board of Regents requires instructors spend less time in class than ATC instructors.

Although the results are limited to one ATC and one college, they seem to be typical of all ATCs and colleges based upon our site visits at each institution. The lower faculty instruction time is not only a college management decision, but is also supported by Board of Regents policy that instruction time should range from "16 to 19 hours per week, depending on the mix of lower division transfer and applied technology programs at the institution."

When we discussed our results with SLCC staff, they were concerned with the way we measured faculty teaching time. In the college environment, a 50 minute lecture is viewed as an hour of teaching, but we measured class time according to the actual minutes listed in the course schedule. We considered adding ten minutes of

class time for each 50-minute period. However, after examining the actual college course schedules at SLCC, we found so many inconsistencies that we could not justify making an adjustment to the time periods. For example, one accounting course is sometimes scheduled for a 50-minute period, three days each week for a total of 150 minutes each week. However, the same course is also offered one day a week, but for a 170-minute class period.

We also found that few career and technical education courses at colleges follow a 50-minute class period. Most college courses are scheduled for two and three hour periods, which is very similar to the pattern observed at the ATCs. Considering the inconsistency in scheduling, and the similarities we observed between college and ATC schedules, we found little justification to adjust 50 minute class periods to 60 minutes.

Differences in Class Size Can Affect Cost Comparison. A third factor that affects the cost per student clock hour is the number of students enrolled in each course. In larger classes, costs are spread over more students reducing the cost per student clock hour.

To illustrate the impact of class size, we looked at the class sizes for accounting classes at Salt Lake Community College and the College of Eastern Utah. Figure 2.1 shows SLCC's cost was $8.26 per student clock hour compared to $22.04 at CEU. The accounting class sizes appear to be the largest cause of the difference; SLCC's average accounting class size was 18, as compared to 8 at CEU. If CEU had an average class size of 18, its cost per clock hour would be $9.79. Therefore, it appears the high cost of instruction at CEU is due primarily to low class size.

The high cost of CEU's accounting program is largely due to its low average class size.

One characteristic of the ATC method of instruction is that students can work on different accounting courses in the same class. In the case of CEU, students are separated into different classes because of course content. If they could offer a similar class structure to that of ATCs, CEU could increase its class sizes and help rein in the high costs.

We did not evaluate the effect of class sizes more fully because the data to do so was not readily available at ATCs. Ideally, we would have evaluated the underlying cost of each program by identifying the hours instructors were in class. That information would have

identified the cost of operating a course without regard to the number of students enrolled. Although we included the cost per instructor hour in our 1995 audit report, recent changes to the management information systems used by the ATCs made it impossible for us to gather the data needed to repeat that analysis.

ATCs Have Lower Overhead Costs than Colleges

In addition to having a lower direct cost of instruction, ATCs spend less than colleges on overhead costs. Overhead includes all shared costs that cannot be directly linked to a specific program. Because ATCs do not provide as many supportive services to students and faculty, have lower cost facilities, and fewer administrative staff, they generally have lower overhead costs. It should be noted that some institutions have been able to avoid some overhead costs due to private donations and partnerships they have formed with other taxpayer-funded institutions.

ATCs' Lower Overhead Costs Reflect Fewer Comprehensive Services

ATCs spend less on overhead costs than colleges.

One useful way to evaluate each institution's overhead costs is to compare that expense to the institution's direct cost of instruction. Of greatest concern are those institutions that spend more on overhead than they do for classroom instruction. We found that overhead costs at the colleges generally exceed their cost of instruction. Whereas the overhead costs at ATCs are generally lower than the amount spent on instruction.

All Institutions Have Common Overhead Cost Categories. In addition to having direct instructional costs, both ATCs and colleges incur overhead or indirect costs. Categories for reporting indirect costs were developed by the National Association of College and University Business Officers (NACUBO) and the U.S. Office of Management and Budget (OMB). Figure 2.5 lists these categories and provides examples of the type of expenditures included in each category. Each college reports expenditures by these functional classifications.

Figure 2.5 Functional Categories Used to Classify Indirect Costs. Indirect costs at Utah's ATCs and colleges generally fell into one of four categories shown below, with examples of the types of expenses included in each category.

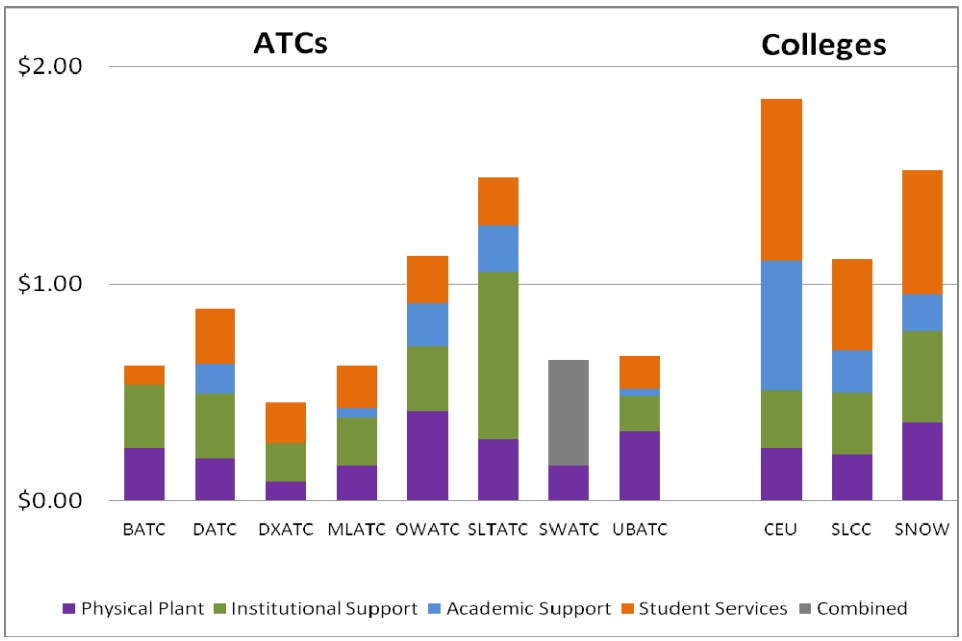
Physical Plant	**Institutional Support**
Building Maintenance Security Utilities Landscape and Grounds	Executive Management Fiscal Operations General Administration Computing Services Public Relations
Academic Support	**Student Services**
Curriculum Development Libraries Museums and Galleries Educational Media Services Academic Computing Services	Social and Cultural Activities Counseling Financial Aid Admissions Student Records

Although not required, most ATCs provide similar overhead cost data in their annual financial statements. A few ATCs were not able to provide us with complete breakdown of their overhead costs. For example, the Southwest ATC was only able to provide its total indirect costs with no breakdown by functional classification. Bridgerland ATC could not separate its academic support costs from other overhead costs so no expenses were reported for that category. Similarly, Dixie ATC obtains its academic support services from Dixie State College without charge. Therefore, no academic support is shown for that ATC.

Overhead costs were reported using NACUBO guidelines; however, two ATCs could not separate some costs.

ATCs Have Lower Overhead Rates. For each institution, we compared the amount spent on overhead costs to the amount spent for the direct cost of instruction. In other words, for every $1 spent on direct instructional costs, we calculated the amount spent for overhead. As shown in Figure 2.6, for every dollar spent on instruction, each of the colleges spent more than that amount for overhead expenses. For all but two, the ATCs spent less than $1 in overhead expenses for each $1 spent on direct instruction.

Figure 2.6 The Amount Each Institution Spent on Indirect Costs For Each Dollar of Instructional Costs. For each $1 spent on classroom instruction, the colleges spend more than $1 on indirect costs; the ATCs generally spend less than $1 on indirect costs.



Higher overhead costs at colleges can be attributed to more extensive services they provide for students.

One of the differentiating areas between colleges and ATCs is their student services. Student services include a wide range of student cultural and extracurricular activities as well as career counseling, financial aid and admissions. According to representatives of the Utah System of Higher Education, their students benefit greatly from the broad range of career counseling and financial services they provide. Furthermore, the colleges have museums, large libraries and intercollegiate sports which help broaden the college student's educational experience but also increase overhead costs.

Among ATCs, the Salt Lake Tooele ATC had the highest overhead rate and spent a relatively large amount on institutional support. The high amount spent on salaries and benefits for administrative staff may have contributed to the restructuring of Salt Lake Tooele ATC during the 2009 General Session of the Utah Legislature. The Ogden-Weber ATC also spends more on overhead than it does on direct instruction. Ogden-Weber's high overhead costs are mainly due to the relatively large amount it spends on its physical plant and facilities.

It should be noted that some ATCs and colleges have been able to reduce their overhead costs, in part, due to donations they have

received from private individuals and businesses. Furthermore, some colleges and ATCs have also benefitted from partnerships with local school districts which provide facilities and equipment without charge when career and technical education programs are located within their high schools. We did not attempt to estimate the degree to which such donations may have reduced an institution's overhead or direct costs.

Students Pay a Portion of Higher College Costs

Although college instruction is more expensive than that provided at ATCs, the students themselves pay a portion of that higher cost. During the 2007-08 school year the cost of tuition and fees at the colleges was about $2,400 for a full time student. In contrast, during the same year a full time ATC student would have paid about $1,350 in tuition and fees. As described later in this chapter, a college CTE student receives about 543 hours of instruction each year and an ATC student receives 900 hours of instruction each year. Thus, in terms of the cost-per-clock hour, the college tuition and fees equals about $4.42 an hour and ATC tuition and fees equals about $1.50 an hour. It does not eliminate the ATC's cost advantage altogether, but does reduce the cost differences (described in Figure 2.1) by about $3 an hour.

Higher tuition at colleges helps offset the higher instructional and overhead costs.

In summary, we found that ATCs offer lower-cost instruction in terms of both the direct instructional costs and overhead costs. While this result is consistent with an earlier audit we completed in 1995, it is not consistent with another more recent study conducted by the USHE in 2007. The next section addresses the main reason for the differences between our results and those of the USHE study.

Our Results Differ Significantly From Prior USHE Cost Comparisons

The results of our cost study are inconsistent with the cost estimates provided in a 2007 Utah System of Higher Education (USHE) study. The reason is the factor used in the USHE study to convert college credit hours to clock hours was too high. The factor used by USHE was 900 contact hours per full time equivalent student (FTE), which is a standard used by a national educational organization to convert contact hours to FTEs. It is a conversion factor based on

the typical, hands-on instruction provided in a laboratory setting. Today, however, many career and technical education courses at colleges such as accounting, and business economics, and paralegal are offered in a lecture format, similar to traditional academic courses, and with little or no laboratory experience.

Costs at Salt Lake/Tooele ATC and SLCC are more similar than reported by a USHE study in November 2007.

Although the USHE study concluded that instruction at Salt Lake/Tooele ATC was much more expensive than at SLCC, we found the costs were actually quite similar on a student-clock-hour basis. The conversion factor we used was 543 contact hours per FTE. It was based on the actual course schedules for classes offered at the SLCC. We found the average cost per clock hour at SLCC was actually $12.39 per hour during the 2005-2006 school year rather than $7.47 per hour described in the USHE report. By comparison, during that same year the Salt Lake/Tooele ATC costs were $12.60 per hour.

The USHE *Study of the Organization and Delivery of Career and Technical Education in the Salt Lake – Tooele Region* was published in November 2007 and covered a number of issues. We address only that portion of the study dealing with costs per clock hour.

College Instruction Time per Credit Hour Varies Depending on Class Format

CTE Programs at SLCC require students to be in class for 13 to 31 hours per credit.

Career and technical education programs at Utah's colleges vary considerably in the amount of scheduled instruction time for each credit hour a student generates. We found that students at SLCC are scheduled to receive between 13 to 31 hours of instruction per credit hour awarded depending on the program. Because of this wide range, an institution's mix of programs can have a great impact on the ratio used to convert credit hours to clock hours.

College course credits are offered in a variety of different formats, including lecture classes and laboratory classes. Different instructional formats may require students to spend very different amounts of time in class for each credit hour earned. In general, according to the Council on Occupational Education, "a credit hour is equivalent to a minimum of each of the following: one semester credit for 15 clock hours of lecture, 30 clock hours of laboratory, or 45 clock hours of work-based activities." Some other states have developed conversion factors that seem to account for the mix of lecture and laboratory

classes offered in college-level career and technical education programs.

Instruction Time per Credit Hour Varies at SLCC. We used actual course schedules to calculate the number of clock hours students spent in class for each credit hour they earned in career and technical education programs. Our results are shown in Figure 2.7.

Figure 2.7 SLCC Clock hours per Credit Hour During 2007-2008 School Year. Programs at SLCC vary widely in the scheduled number of clock hours per credit hour awarded. We defined a clock hour as a 60 minute period of scheduled class time.

Program	Student Clock Hours	Credits Generated	Clock Hours Per Credit
Business Economics	69,120	5,355	12.9
Business Management	117,042	9,008	13.0
Accounting	79,663	5,881	13.6
Computer Information Systems	186,802	13,662	13.7
Marketing Management	25,811	1,881	13.7
Criminal Justice	42,045	3,060	13.7
Finance and Credit	51,351	3,726	13.8
Computer Science	30,307	2,187	13.9
Family & Human Studies	43,671	3,106	14.1
Aviation Tech/Prof Pilot	17,380	1,235	14.1
Paralegal	17,996	1,269	14.2
Medical Assistants	29,829	1,797	16.6
Architectural Technology	45,609	2,425	18.8
Telecommunications	19,844	1,050	18.9
Physical Therapy Assistant	20,876	1,098	19.0
Building Const/Construction Management	46,453	2,384	19.5
Engineering Design/Drafting	39,238	1,945	20.2
Nursing	119,490	5,304	22.5
Visual Art & Design	261,129	11,176	23.4
Barbering & Cosmetology	215,144	8,621	25.0
Welding	28,038	1,109	25.3
Dental Hygiene	29,056	1,123	25.9
Miller Campus Automotive	43,316	1,506	28.8
Radiological Technology	58,913	1,921	30.7
Aviation Tech/Maintenance Tech	56,489	1,832	30.8
Grand Total	**1,694,612**	**93,661**	**18.1**

Note: Programs with less than 1,000 student credit hours are excluded.

Figure 2.7 shows that the instruction time requirements for programs are quite different. For example, accounting students have 13.6 scheduled hours of instruction per credit hour while welding students have nearly twice that amount. We believe the difference reflects lecture vs. laboratory course formats. While accounting students may

The amount of time students spend in class is affected by how many lecture and laboratory classes their program requires.

have homework assignments in addition to lecture presentations, only the scheduled instruction time is considered when calculating total hours. In contrast, welding at SLCC is taught in laboratory format where the instructor is available to assist students for much more time.

As mentioned earlier, SLCC officials expressed concern that the clock hours per credit shown in Figure 2.7 is based on a 60-minute hour rather than the 50-minute hour often used in higher education. For example, an academic-type CTE course might be taught in 16 lectures of 50 minutes each. While higher education officials view that schedule as 16 hours of instruction, we calculated it as 13.3 hours. We considered adjusting the data in Figure 2.7 to reflect the 50-minute hour, but decided the data did not justify doing so.

Three other states use conversion factors less than the 900 hour factor used by USOE.

Other States Use Their Own Conversion Factors. As discussed in Chapter I, the different measures colleges and ATCs use for student enrollment make comparing costs difficult. We identified three states that appear to have calculated their own conversion factors which are much lower than the 900 ratio used by USHE. They are Colorado, Oregon and Washington. Figure 2.8 shows their conversion factors as well as Council on Occupational Education (COE) values for lecture and laboratory formats. In addition, the SLCC values as estimated by this audit and as used in the USHE study are shown.

Figure 2.8 Many Different Conversion Factors Are Available. A full-time-equivalent (FTE) student is defined as a student enrolled for 30 credit hours. As a result, clock hours can be expressed in terms of student FTEs or in terms of the clock hours per credit hour.

Conversion Factor Sources	Clock Hours Per Student FTE	Clock Hours Per Credit Hour
Lecture classes per COE	450	15.0
CTE classes per Oregon	510	17.0
SLCC CTE classes per audit	543	18.1
CTE classes per Colorado	563	18.8
CTE classes per Washington	743	24.8
SLCC CTE classes per USHE	900	30.0
Laboratory classes per COE	900	30.0

At an ATC all clock hours are considered to be laboratory time, so 900 hours is considered a full-time-equivalent student. However, in college academic setting, 450 hours generally equates to a full time

equivalent student (i.e., 30 credit hours). Where colleges use a mix of lecture and laboratory formats in their CTE offerings, an intermediate conversion factor is appropriate.

Cost Analysis Conclusion Depends On Conversion Factor Used

Using a different factor to convert student credit hours to clock hours changes the results. As indicated above, we do not believe a conversion of 30 clock hours per credit hour for SLCC is accurate because the CTE programs include a mix of lecture and laboratory formats. Instead, we estimate that a conversion factor of 18.1 is appropriate. Figure 2.9 shows the different results provided by the different factors.

Our calculated student clock hours provide a different conclusion than the conversion factor used by USOE.

Figure 2.9 Cost per Student Clock Hour at SLCC Using Different Conversion Factors. The USHE study's calculation of cost per student clock hour at SLCC was too low because the conversion factor used to estimate student clock hours was too high.

SLCC 2006 CTE Courses	Per USHE Study	Per Audit
Cost	$ 35 million	$ 35 million
Credit Hours	156,570	156,570
Cost per Credit Hour	$ 224.20	$ 224.20
Student Clock Hours per Credit Hour	30	18.1
Cost per Student Clock Hour	$ 7.47	$ 12.39

Thus, the cost for SLCC career and technical education courses is much greater than reported in the USHE study. Our estimate of $12.39 per student clock hour is only slightly lower than the Salt Lake/Tooele ATC cost of $12.60 per hour.

It should be noted that when costs are considered on a student FTE basis rather than a student-clock-hour basis, the results will change. The reason for this difference is that students at ATCs spend more time in class than students at colleges. As shown in Figure 2.8, the typical student in an SLCC career and technical education program receives 543 hours of instruction. In contrast, the ATC laboratory format provides 900 hours of instruction per FTE.

The analysis in this chapter echoes one of the concerns from the 1995 audit our office conducted. The concern was that "the use of a single

multiplier would have been inaccurate because some courses require students to spend more time in class for every credit hour earned than others." If an average conversion factor is used, it should be based on the particular mix of programs included.

Chapter III
Some Institutions Receive Funding for Instruction They Do Not Provide

In most cases, legislative appropriations for career and technical education are closely related to the cost of providing instruction. However, under certain conditions, Utah's Applied Technology Colleges (ATCs) and school districts have received state funding for instructional services they did not provide. For example:

- Two ATCs have developed partnerships with private businesses that allow them to increase their membership hours and their funding, while bearing only a portion of the cost of instruction. Last year one such partnership earned the Southwest ATC $455,000 in excess appropriations.

- School districts receive funding for their secondary students enrolled in ATC programs even though the districts provide no instruction. For the 2007-2008 school year, school districts received about $5 million in student membership funding for students they did not teach.

By outsourcing programs to private businesses, some ATCs have been able to generate appropriations that far exceed the program's cost .

These practices raise questions about the equity of the state's approach for funding career and technical education. While equity can be defined in many ways, for the purposes of this report, we evaluated funding equity in terms of how well funding is aligned with costs. If institutions receive full funding for instructional programs for which they provide little or no financial support, fewer funds remain available for other institutions. To address this inequity, we offer several recommendations that should be considered by the Legislature and the Utah College of Applied Technology Board of Trustees.

Two ATCs Receive Funding for Instruction They Do Not Provide

During our review, we found three partnerships involving ATCs and private industry that raise concerns. They include the livestock management program at the Southwest ATC and the cosmetology programs at the Southwest ATC and the Dixie ATC. In each case, the

ATCs outsource the training delivery to a private business and make a partial contribution to the cost of instruction. Yet the ATCs are allowed to claim all of the membership hours associated with the programs as well as the funding that is attributed to those membership hours. The result is the state is paying far more than it costs to operate these programs. For example, the livestock management program costs only $67,000 to operate but generates about $521,000 for the ATC.

Outsourcing instruction reduces ATCs resource commitment while allowing them to claim more membership hours.

We question why the UCAT Board of Trustees has allowed ATCs to outsource its training to private entities, to participate at less than full cost of the program, and to then claim all the membership hours generated by the program. After all, UCAT policies describe membership hours as an "indicator measuring campus instructional resource commitment." In these examples, the ATCs have not made a full commitment of resources but are still allowed to draw down funding as if it were covering the full cost of the program.

Due to the potential that outsourced programs have to generate large excess appropriations for an ATC, we believe the UCAT Board of Trustees should exercise greater control over such programs. Specifically, we recommend the board adopt formal policies to govern the practice of outsourcing instruction. In addition, exemptions currently granted by the UCAT Board have no expiration date and should be eliminated or time limits should be assessed.

Livestock Management Program Generated $455,000 in Excess Revenues

A major portion of Southwest ATC's membership hours comes from in-house training at a private business.

For over ten years, Southwest ATC has participated in a livestock management program at the Circle Four Farms, a major hog farm operation located in Milford City of Beaver County. The program represents a major portion of the ATC's overall enrollment. However, the ATC does not actually provide any instruction. It merely contributes funds towards the cost of the in-house training provided to hog farm employees at the company's facilities in Milford.

The $67,000 which the ATC pays each year is intended to cover a portion of the salaries of the Circle Four Farm employee who oversees the instructional program. Additional costs incurred by the hog farm include the cost of benefits and other support personnel involved in the training program. Although the ATC does not cover the full cost

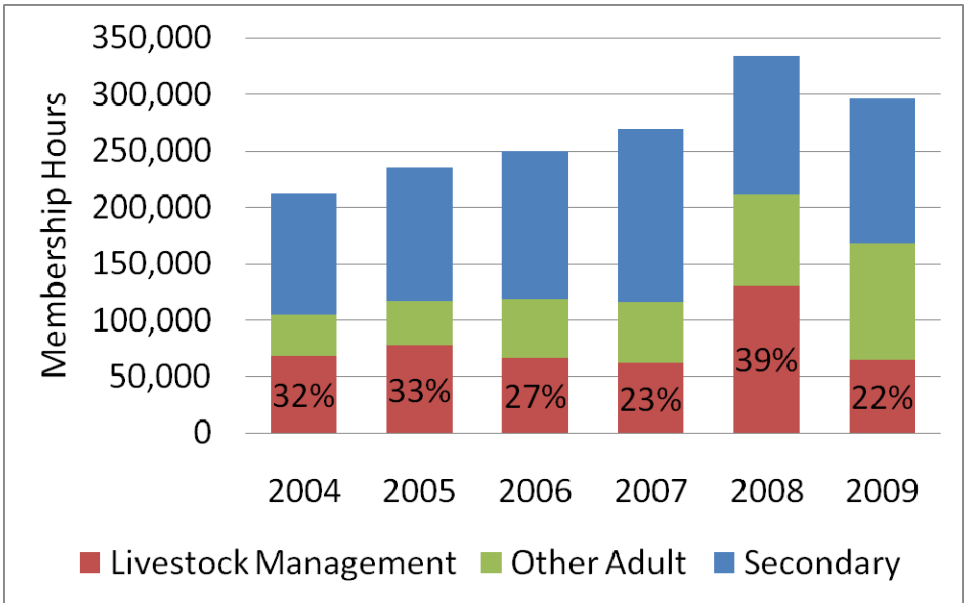
of instruction, it is allowed to claim all of the membership hours associated with the program. As a result, the appropriations exceed the cost of the program by about $455,000.

We do not believe the livestock management program meets the requirements for regular ATC funding. In order for a training program to qualify for budget-related status, an ATC is normally required to cover the full cost of instruction. In addition, the instruction should be aimed at the public at large and not be limited to the employees of a single firm. Because the ATC does not cover the full cost of instruction and because the program provides on-the-job training to the employees of a single firm, it appears to be more like a custom fit training program than a regular budget-related ATC program.

Southwest ATC Relies on Its Livestock Management Program to Boost Membership Hours. Although the ATC does not actually provide the instruction, its livestock management program represents a major portion of the ATC's total enrollment. Figure 3.1 shows the number of membership hours attributed to the livestock management program as well as the hours for other adult and secondary programs.

The Livestock Management Program accounts for at least 22 percent of Southwest ATC's membership hours.

Figure 3.1 Enrollment in Livestock Management as a Percent of Southwest ATC's Total Enrollment. Historically, the livestock management program has represented a major portion of the ATC's total enrollment.



The livestock management program has represented as much as 39 percent of all enrollment during 2008, and as little as 22 percent of enrollment in 2009. In all years except 2009, the livestock management program (in red) accounted for more membership hours than all other adult programs combined (shown in green).

According to Southwest ATC and Circle Four Farms, the surge in livestock management hours in 2008 was a result of the farm's expansion and employee turnover. However, even without the spike in enrollment in 2008, the livestock management program has always been a significant source of membership hours for the ATC.

State funding is tied to membership hour growth even though growth has not been funded the past two years.

Appropriations Attributed to Livestock Management Far Exceed Program Costs. The state's approach to funding career and technical education is related to the number of membership hours generated by the ATCs. We recognize that the Legislature has not been able to fund the growth in enrollment during the past two years. However, without the livestock management program, it would be difficult for the Southwest ATC to justify funding at current levels. Based on its annual appropriation and the number of membership hours generated during fiscal year 2009, we attribute $8.10 to each membership hour reported by the Southwest ATC. Figure 3.2 compares the total revenues attributed to the livestock management program to the Southwest ATC's cost of the program.

Figure 3.2 Appropriations and Costs for Southwest ATC Livestock Management Program in 2009. During fiscal year 2009, SWATC received excess appropriations of $455,000 for its livestock management program.

Livestock Management Program	SWATC
Attributed Appropriations	$ 521,397
ATC's Contribution to Program Costs	66,813
Excess Appropriations	**$ 454,584**
Percent Spent on Instruction	**13%**

Southwest ATC spends 13 percent of its appropriations on instruction, producing $455,000 in excess appropriations.

Figure 3.2 shows that that the livestock management program generated $521,000 in appropriations for the ATC while costing only $67,000 to operate. The balance, which we describe as excess appropriations, comes to $455,000.

Livestock Management Program Would Be Better Characterized as a Custom Fit Program. Certain aspects of the livestock management program raise questions as to whether it should even qualify as a regular career and technical education program. Because the training is only offered to Circle Four Employees and because SWATC only covers a portion of the cost of training, it might be best described as a custom fit program.

A custom fit classification would address concerns regarding percent of costs covered and availability to the public.

In a 2003 contract with the Circle Four Farms, the SWATC agreed to pay $66,813 which it describes as the "full cost of instruction." However, during the six years since that original contract was signed, the ATC has continued to pay that amount with no adjustment for inflation. In addition, the ATC's payment has remained the same year after year even though the enrollment in the program has fluctuated. Finally, a representative from Circle Four Farms told us that the $66,813 does not cover the full cost of its training program.

Another reason the livestock management program does not fit the traditional ATC program is that it is provided to the employees of a single firm and not the public at large. In its contract with the ATC, Circle Four Farms agrees to provide "swine herd and animal husbandry training to each new employee and other area residents who may enroll." However, representatives of the company told us that they could not recollect anyone ever having enrolled in the program who was not a Circle Four employee.

In our view, the claims that the program is available to the general public seem to be aimed at helping the program remain eligible for regular state funding. It seems unlikely that people would travel to the firm's hog farm operations in remote locations in Beaver County for on-the-job training in livestock management if they were not already employed by Circle Four Farms. Similarly, it seems unlikely that the company would allow people to receive on-the-job instruction if they were not already an employee.

The Custom Fit program helps facilitate in-house training for companies.

Even if the ATC had covered the full cost of instruction and had opened the program to the general public, we would still have concerns about the program. On-the-job training for hog farm employees seems more suitable as a custom fit program than a regular ATC program. "The mission of Custom Fit is to support economic

and workforce development through training partnerships between Utah companies and the Utah College of Applied Technology (UCAT)." Using appropriations for Custom Fit programs, ATCs are able to tailor training specifically to a company's needs. However, treating Circle Four Farms in-house training as a regular ATC program has benefited both the business and the ATC. Circle Four gets $67,000 per year to train its employees. Southwest ATC gets to keep the excess appropriations above its $67,000 costs (about $455,000 in 2009).

ATCs Provide Minimal Value in Outsourced Cosmetology Programs

In 2004, Southwest ATC and Dixie ATC contracted with private cosmetology schools to provide training for their students. Relying on an exemption granted by the UCAT Board of Trustees, the ATCs paid a portion of the costs of instruction but counted all the time students spent in class. The exemption allowed these ATCs to count hours at a minimal cost and to generate revenues that far exceed program costs. As with the livestock management program, this case raises questions about the fairness of allowing ATCs to claim all hours associated with partially-funded programs.

ATCs outsource cosmetology instruction to private schools by covering a portion of student tuition.

The Dixie and Southwest ATCs have signed agreements with local cosmetology schools to provide $1,250 per year over a two year period for a total of 2000 hours of instruction for any secondary student enrolled in those private training programs. The contribution made by ATCs is relatively small when compared to the tuition private cosmetology schools charge. At the schools listed in the agreements, the program cost is advertised as $9,000 for 2,000 hours of instruction. Therefore, ATCs only cover 28 percent of the total costs of instruction, leaving the rest to be paid by the student. The fact that the student pays the balance is also a concern because high school students are generally exempted from paying tuition for ATC-funded programs.

Since the ATCs have an exemption agreement from the UCAT Board of Trustees, they are allowed to include all of the hours students spend in these courses as part of the school's own count of membership hours. The following table shows the funds that can be attributed to the cosmetology programs, the ATC's contribution towards instruction, and the excess appropriations that result.

Figure 3.3 Comparison of Costs and Appropriations for Cosmetology Programs at Dixie ATC and Southwest ATC. The table shows the FY 2008 costs and appropriations associated with each campus' cosmetology program and the percent spent on instruction.

Cosmetology Programs	DXATC	SWATC
Attributed Appropriations	$ 240,907	$ 29,373
ATC's Contribution to Program Costs	34,065	5,521
Excess Appropriations	**$ 206,842**	**$ 23,852**
Percent Spent on Instruction	**14%**	**19%**

As the figure shows, both campuses spend only a fraction of their appropriations on instruction. As with the livestock management programs, this program raises concern about the fairness of providing full support for a program in which the ATC bears only a small portion of the costs. This concern and others raised by these programs are discussed in more depth in the following section.

Controls for Outsourced Instruction by ATCs Is Needed

Both the livestock management program and cosmetology programs demonstrate the benefit outsourced education can be to ATCs. However, formal policies are needed to govern the practice of outsourcing instruction. In addition, exemptions currently granted by the UCAT Board have no expiration date and should be eliminated or time limits should be assessed.

Formal policies are needed governing the practice of passing on funds to private providers of career and technical education.

Policies Should Be Established Regarding Outsourcing ATC Instruction. At the center of our concerns is whether ATCs should be outsourcing instruction. According to the UCAT mission statement, ATCs are to provide "market-driven technical education to both secondary and adult students." Whether passing funds on to private providers is within that mission is something that necessitates formal policy.

Before voting to approve exemptions for the cosmetology programs in April 2005, a UCAT Board member expressed concerns about the practice of outsourcing instructional programs to private entities. He said:

> I'm just concerned that we not get into a trend of being a pass-through for programs in the ATCs. If there's a need there,

maybe we need to be operating those programs, but to pass it through and give the money that we're given by the Legislature to the private people involved in that, I'm wondering if that's the appropriate thing to do.

A UCAT board member expressed concern about the appropriateness of pass through funds.

We echo the concerns raised by this board member. Whether the Board considers passing money on to private providers is within their mission is a decision that should be formalized in policy, where a formal process of considering alternatives, student need, and other factors can be outlined. Therefore, we recommend that the UCAT Board develop policies that clearly identify the conditions where ATCs outsource student instruction to private providers.

UCAT Board Should Limit Their Exemptions. The UCAT Board has drafted a set of membership hour policies that outline standards applied to all programs. In unique circumstances, programs are proposed that do not meet these standards and are granted exemptions because they create value for the college. Our concern with this practice is that current exemptions do not have an expiration date. Therefore, programs that no longer meet the original criteria are allowed to continue in perpetuity.

In the case of the livestock management program, the initial exemption for the program was granted under pretenses of it being an economic development tool. Over ten years later, we contend that the initial justification for the program is no longer valid, and a new review is necessary to determine whether continuing the program is justified. As a result, we recommend the UCAT Board consider eliminating or establishing time limits on its exemptions.

School Districts Receive Funding For Students Educated by ATCs

The second funding equity issue discussed in this chapter is that the State of Utah provides full funding to local school districts even when their students are being taught by ATCs. When a secondary student attends an ATC, the school district no longer bears the full cost of instructing that student. However, under existing statute school districts continue to count those students as if they were still attending their high school full time. Since ATCs also receive funding

to teach the same students, taxpayers essentially pay twice for the same service.

In 2008, taxpayers contributed about $8 to 12 million to school districts and $13 million to ATCs to educate the same students. Of those amounts, school districts received about $5 million based on student membership counts for students they did not teach. This $5 million amount only includes weighted pupil unit funds based on student membership counts; other state and local funding is excluded.

We raise this issue with school districts because our audit assignment was to review funding equity. We assessed equity based on whether funding is aligned with costs. Utah law clearly states that school districts should continue to receive full state funding for students who attend ATCs. According to ***Utah Code*** 53A-17a-114(2), "Students served under this section in a regional applied technology college shall continue to be counted in the regular school program average daily membership of the sending school district."

Utah Code **states that school districts may receive funding for students actually taught by an ATC.**

If the Legislature wants to create a more equitable approach to funding career and technical education, it should consider either (1) adjusting student membership counts for secondary students attending ATCs or (2) requiring school districts to pay the cost of tuition for students attending an ATC. Either change would require a statutory amendment. The justification for changing state policy would be to provide greater equity to the funding system by more directly aligning funding with the costs of instruction.

By Sending Students to ATCs, School Districts Avoid Some Costs

School districts send some of their students to ATCs for career and technical education. When students attend these courses, some of their costs for instruction and support are avoided. It was beyond our audit scope to determine actual costs savings realized by school districts. However, based on statewide averages, school districts receive from $8 to 12 million for the nearly 2,000 FTE students in ATCs programs.

According to statute, part of the mission of UCAT and its ATC campuses is to provide education to secondary students. In fiscal year 2008, secondary students in ATC programs generated 1,919,570

membership hours. USOE policy states that full-time equivalent (FTE) students should receive 990 hours of instruction during the school year. Therefore, 1,939 FTE students from school districts were educated by ATCs.

ATCs spend approximately $13 million to educate secondary students.

ATC costs to educate these secondary FTEs are over $13 million. This figure is based on a recent UCAT budget request of $7.00 per membership hour for secondary students. While ATCs incur these costs, school districts experience a cost savings by sending their students to ATCs.

According to USOE data, on a per student basis school districts spend approximately $4,300 on instruction and $1,800 on support services. The combined spending of roughly $6,100 per student excludes capital facilities costs. Since these averages account for all courses offered by school districts, actual costs for career and technical education may be different due to cost factors like equipment, materials, and class sizes.

We did not calculate the actual costs savings from career and technical education provided by ATCs because it was beyond the scope of our audit. However, we believe that school districts must realize some savings from not educating and supporting students when they attend ATCs. Although the $8 to 12 million cost estimate is based on statewide averages, at least a portion of that amount should be saved by school districts.

School districts save some of the $8 to 12 million that they receive for students attending an ATC.

Although school districts avoid costs when their students attend ATCs, their funding is not affected. The remainder of this chapter discusses two options the Legislature could consider if it wants to address the issue. The Legislature could require that (1) an adjustment be made to student membership counts or (2) they could require that school districts pay tuition for students attending an ATC.

Legislature Could Adjust WPU Funding For Secondary Students Who Attend ATCs

One option the Legislature could consider would be to adjust school district funding that is based on student membership counts. School districts receive funding from a variety of sources, including weighted pupil unit funds based on student membership counts, so

called "below the line" state funds, and local funds. This section only addresses state funding based on student membership counts.

As mentioned earlier, state law provides that school districts are still entitled to receive payment of a full Weighted Pupil Unit (WPU) for each student who attends an ATC. In fiscal year 2008, the state paid school districts nearly $5 million for students who attended ATCs. The following figure shows how much funding the Legislature has appropriated to school districts over the past three years for the secondary enrollment subject to this law. The $5 million below does not include other state and local funds that school districts receive.

School districts receive $5 million from membership counts of secondary students enrolled in ATC programs.

Figure 3.4 WPU Appropriations for UCAT Secondary Students. The figure shows how many full-time equivalent students were enrolled in UCAT programs and the amount of state appropriations school districts received for those enrollments.

	2008	2007	2006
Membership Hours	1,919,570	1,948,583	1,898,077
FTE Students *	1,939	1,968	1,917
WPU Value	$ 2,577	$ 2,514	$ 2,417
Next Year's Appropriation	**$ 4,996,699**	**$ 4,948,220**	**$ 4,633,992**

* 1 FTE equals 990 membership hours for secondary students.

As Figure 3.4 shows, the ATCs served 1,939 full time equivalent secondary students in fiscal year 2008 for which school districts were paid $5 million in state appropriations. Each student FTE in 2008 generated a $2,577 WPU in fiscal year 2009.

Since school districts experience some savings when students are educated at ATCs, the Legislature could adjust funding. For example, rather than allowing schools to fully count students at ATCs in their average daily membership, a partial amount could be used. Currently, secondary students who attend ATCs are fully funded in both school districts and ATCs. Even if membership funds were reduced, other state and local funding would not be affected. However, if legislators desire to allow school districts to continue generating these WPUs, then another option would be to require school districts to pay the cost of tuition for students attending an ATC as discussed in the next section.

The Legislature should consider adjusting how much funding school districts receive for ATC students.

Legislature Could Direct School Districts To Pay Tuition for Students who Attend ATCs

According to statute, UCAT campuses cannot charge secondary students tuition. The Legislature helps offset the loss of this tuition by allowing UCAT administrators to use a higher funding rate that includes tuition for secondary membership hour growth. For example, a recent funding request was calculated as $7.00 per membership hour for secondary students and $5.65 per membership hour for adult students; the difference was based on estimated tuition. Since school districts receive excess funding for UCAT students, the Legislature should consider having districts use a portion of their student membership funding to pay the student's tuition.

Since secondary students at ATCs cannot pay tuition, the Legislature covers those lost funds.

In addition to encouraging ATCs to educate secondary students, state law requires that ATCs not charge secondary students tuition. According to ***Utah Code*** 53B-2a-106(1)(a)(ii) ATCs shall charge "no tuition to secondary students." Although secondary students do not pay tuition to attend UCAT programs, adult students in fiscal year 2010 pay a standardized rate of $1.40 per membership hour.

Adult tuition generates approximately 11 percent more revenue for ATCs beyond their legislative appropriations. When generating budget requests, UCAT administrators reduce their requested amount by the amount of adult tuition generated. Therefore, their requests only include a base rate for all membership hours plus replacement funds for secondary tuition. The following figure shows the total membership hours, adult tuition, and unpaid secondary tuition for each ATC.

Figure 3.5 Tuition Generated by Secondary and Adult Students at Each ATC. This table shows the relative size of each ATC by membership hours and the tuition generated during fiscal year 2008 by the secondary and adult students at each campus.

Institution	Secondary Hours	Adult Hours	Unpaid Secondary Tuition	Actual Adult Tuition
BATC	328,019	690,113	$ 426,425	$ 895,336
DATC	285,846	812,335	371,600	1,294,516
DXATC *	70,229	106,560	91,297	158,517
MATC	472,994	317,838	614,892	412,309
OWATC	309,079	886,595	401,802	1,436,403
SLTATC	42,404	223,469	55,125	339,328
SWATC *	119,081	79,312	154,805	100,519
UBATC	260,249	250,412	338,324	293,302
All Campuses	**1,887,901**	**3,366,634**	**$2,454,270**	**$4,930,230**

* Hours for Livestock Management and Cosmetology Programs Excluded.

Figure 3.5 shows the impact of the policy that secondary students are prohibited from paying tuition. In Figure 3.5, Mountainland ATC has three times as many membership hours as the Salt Lake-Tooele ATC, with 790,833 and 265,891 hours respectively. However, Mountainland ATC only collects 22 percent more adult tuition than Salt Lake-Tooele ATC. Therefore, the Legislature subsidizes more of the Mountainland ATC programs because they educate a greater proportion of secondary students.

In summary, giving school districts funding for students they do not educate raises concerns about the equity of the current funding system. If the Legislature wants to address this issue, it could either adjust the rate WPUs are generated or have school districts pay the cost of the tuition with the WPU funds they receive. The adjustment to school district funding could be offset to some extent by the cost of donated facilities, equipment and services they provide to the ATCs. Either of these two options would reduce some of the excess funds that school districts receive, as well as offset some of the additional subsidy for secondary students attending ATCs.

School districts could cover secondary student tuition rather than having the Legislature provide additional appropriations.

Recommendations

1. We recommend that the UCAT Board of Trustees exercise greater control over outsourced instruction by:
    - eliminating all outsourcing of instruction to private organizations, or

- developing policies that clearly identify the conditions under which ATCs may outsource student instruction.

2. We recommend that the UCAT Board of Trustees clarify its policies regarding program exemptions by:
   - eliminating all exemptions to UCAT policies, or
   - establishing clear policy regarding the conditions under which exemptions will be granted, including the time limits placed on such exemptions.

3. We recommend the Legislature consider adjusting school districts funding for students who are educated at ATCs. Options include:
   - reducing the state funding school districts receive for students who attend ATCs. This change would require amending ***Utah Code*** 53A-17a-114(2).
   - allowing school districts to continue to receive full state funding for students who attend ATCs, but having school districts pay the normal ATC tuition for their students who attend ATCs. This change would require amending ***Utah Code*** 53B-2a-106(1).

Agency Response

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November 3, 2009

Mr. John Schaff
Legislative Auditor General
W315 State Capitol Complex
Salt Lake City, UT 84114

Dear Mr. Schaff:

Thank you for allowing us to respond to your report titled "A Performance Audit of the Cost of Career and Technical Education Among Colleges and ATCs." In general, the Utah College of Applied Technology Board of Trustees (the Board) concurs with the findings and recommendations included in the audit report. The timing of the audit was ideal, as we were also engaged in a major effort to revise policies and procedures related to membership hours, enrollment growth, and budget requests. The questions and issues considered during the course of the audit have helped shape the future of policy and practice.

The general conclusion that colleges and ATCs are different – use different measures of student instruction, have different direct costs, have different overhead costs, etc. – was of particular interest to the Board. We certainly agree with this general finding, as well as a 1995 finding that, despite the differences, both systems are vital to the State's workforce and economy. In short, the systems are different because they serve different missions. But to be sure, both are necessary to adequately meet the needs of Utah's citizens.

The Board acknowledges the findings related to outsourced instruction and policy exemptions. We have already initiated an extensive policy review process designed to address the issues noted in the audit report. The following responses to the individual audit recommendations detail specific steps to be taken.

Recommendation 1: Concur. The Board will consider this recommendation as it continues a comprehensive policy review process.

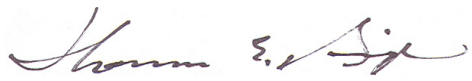
Recommendation 2: Concur. The Board will review the conditions under which exemptions are granted, including time limits placed on such exemptions.

Recommendation 3: Since the creation of the first ATCs over forty years ago, the intent of both legislators and educators has been to allow secondary students to enroll in ATC programs at no tuition cost to either the student or the school district. There has also been long-standing intent that school districts continue to receive the full weighted pupil unit (WPU) when

students leave their home high school to attend an ATC. The Board urges the Legislature to consider continuation of this long-standing agreement as a basic tenet of the successful partnership between ATCs and school districts.

Again, we appreciate the chance to respond to this audit. The auditors were professional and fair in their work, and we will give careful consideration to each of the recommendations. If you have any questions, please feel free to contact us.

Sincerely,



Thomas E. Bingham
Chair, Board of Trustees

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November 4, 2009

Mr. John Schaff
Legislative Auditor General
W315 Utah State Capitol Complex
Salt Lake City, UT 84114-5315

Dear Mr. Schaff:

On behalf of the Utah System of Higher Education (USHE), thank you for the efforts of the audit staff as they reviewed the cost of career and technical education among colleges and ATCs. We appreciate the difficulty of the task in preparing a report that attempts to walk between the traditional USHE system (hours/credits) and the ATC job training model (non-credit, open entry/exit). It is a very difficult task to achieve since the two systems are rather inherently incompatible for the following reasons:

- USHE courses are often part of an overall program of study, leading from entry-level positions (such as an Accounting Technician) to mid-level and professional positions (such as CPA). The higher the level of training, often, the higher the cost, but also the higher wage when in the workforce. In contrast, UCAT courses or sequence of competencies are generally limited to training for entry-level (lower-paid) positions.
- Instructional methods often differ, thus creating difficulties in comparing instruction time.
- The nine credit-granting colleges and universities follow more rigorous accreditation standards which can affect costs.
- Standards for faculty –including credentialing required - are greater at USHE -9 institutions
- The UCAT System of measurement is less well-defined than that available in higher education.

While the auditors' methodology focused on cost per student clock hour (time in class), a different methodology in which USHE instructors are recognized for the instruction provided during office hours or before and after class would have shown the costs to be more comparable. We recognize the difficulty the auditors had in quantifying these out-of-class instruction hours, and appreciate the auditors giving recognition in the report to this form of instruction; however, the system would have preferred to have an estimated number of additional instruction hours outside of class rather than no consideration to these required teaching activities. The out-of-classroom instruction, and instructional related assignments, in USHE would be accounted for in an open entry/exit classroom setting since these instructors answer questions as students work at their own pace in the ATC classroom/laboratory setting.

While the report has no recommendations directed to the USHE colleges and universities, we feel the importance of responding to the audit. The role of higher education in the State includes many public service and student services requirements and expectations that are unique to that arena. The educational experience is different at a USHE institution versus an ATC. Both forms of instruction serve a purpose—catering to different student and programmatic needs—though one might cost more than the other. We urge consideration by the Legislature to recognize the value of both ATC and USHE CTE

instruction and refrain from adjusting CTE curriculum based on cost. Lastly, USHE institutions offer to bring the best of the UCAT approach into our system for non-credit job training programs.

Attached is the USHE response to the audit. We look forward to responding to questions and suggestions as this audit report is presented to various legislative committees.

Sincerely,

William A. Sederburg
Commissioner of Higher Education

Attachment

Response to the Legislative Audit of the Cost of Career and Technical Education Among Colleges and ATCs

The Utah System of Higher Education (USHE) appreciates the opportunity to respond to the audit of cost of career and technical education (CTE). The auditors looked at the cost of providing CTE on a per student clock hour at both the colleges/universities and also ATCs. Though the auditor's methodology provides one way of looking at costs between the two systems, there are other factors that should be considered since the two systems are inherently different.

USHE is concerned that simply comparing costs of CTE courses at ATCs and USHE institutions is incomplete and may unintentionally lead to incorrect conclusions. Even where both credit-granting USHE institutions and ATCs are providing CTE courses, it is difficult to make an apples-to-apples comparison. For instance, USHE courses are often part of an overall program of study, leading from entry-level positions (such as an Accounting Technician) to mid-level and professional positions (such as CPA). The higher the level of training, often, the higher the cost, but also the higher wage when in the workforce. In contrast, UCAT courses or sequence of competencies are generally limited to training for entry-level, and therefore, lower-paying positions. Furthermore, credit-granting institutions have unique missions and roles, State and public service expectations, regional accreditation standards, federal compliance requirements, and substantially greater levels of student support services– all of which, while for the greater public good, need to be factored in when comparing costs amongst organizational types.

Though there are no recommendations to the Legislature regarding USHE, we urge readers of this audit report to recognize other factors that affect costs discussed in the report.

- Instructional differences exist between ATCs and colleges/universities.
- Direct teaching costs are higher within USHE for various good reasons.
- Indirect costs provide many student support services necessary in USHE institutions.
- Snow College and CEU offer accessibility to CTE programs for rural residents, even though fewer students cause a higher cost per student clock hour than more urban CTE programs.
- Long-term efficiencies exist with CTE for credit from USHE institutions.
- 2007 USHE study used a nationally recognized standard to analyze costs from a full-time equivalent (FTE) student perspective.

Methodology Differences Exist in Instruction

The auditors' methodology approached the cost of providing CTE by using the time a student spends in a classroom. This is called the student clock hour. The auditors selected this methodology because it is readily quantifiable. However, the two systems track hours differently and involve differences in instructional methods in many cases.

In the report, the auditors use the 50-minute hour for USHE institutions as in-class instruction. Using this method discounts the fact that students will be asking questions before or after class to the professor or instructor. However, the time answering questions would be accounted for as a form of

instruction at an ATC where students work at their own pace, doing homework in class, and asking the instructor questions as needed. For USHE institutions, adjusting the clock hour down by 17 percent (reduction of 10 minutes) results in those Q&A sessions not being recognized, and has a significant impact, increasing costs per clock hour by 20 percent at the colleges.

In addition, the audit does not attempt to quantify the out-of-classroom instruction that occurs at a USHE institution. If a student has questions outside of class, perhaps while working on homework, the student may either send e-mails to or visit the faculty member during designated office hours. This form of instruction is accounted for within the ATC's teaching workload, but only recognized by the auditors on page 12 of the report but not quantified. The "teaching" that occurs outside of the classroom is an important factor, and is not accounted for in the way this report analyzes teaching workloads of USHE faculty members.

Instruction at an ATC provides students the ability to start a program when they want and to work at their own pace. This method of instruction is open entry/exit. The ATC instructional method is not conducive to traditional lecture style teaching in most cases. Rather, this method of teaching is often self-paced, allowing students to ask questions and receive one-on-one assistance when needed, while the students work on projects during class time. In essence, students do lab work and homework during their ATC classroom time. Of note, there are some open entry/exit CTE courses within USHE as well.

Direct Teaching Costs

The audit shows on page 10 that salaries and benefits are higher at colleges than at ATCs. This comparison does not account for the higher expectations that typically accompany college faculty positions. College faculty members generally have advanced degrees, are able to teach various courses in a program, and must meet the accreditation standards of the institution.

At an ATC, there are different accreditation standards and often no requirement that an instructor have a degree. As the audit shows, many of the instructors at an ATC are adjunct positions which generally receive less pay, fewer benefits, and limited professional development opportunities. The faculty member's compensation at an institution is reflective of the educational degree required and the need for an institution to be competitive in attracting the talent necessary to assure student success. Though the compensation costs for a college faculty member may be higher, the added value to a student and an institution's competitiveness from having these credentials should also be considered.

Another significant point regarding "costs", acknowledged by the auditors on page 17 of the report, is that costs to the institution are not the same as costs to the State in the terms of dollars appropriated. For instance, at SLCC, approximately 40 percent of the cost is covered with tuition instead of appropriated tax dollars, compared to only 10 percent for adults at ATCs and zero for secondary students. Had this been taken into account, again as noted by the auditors, it would have adjusted the cost to the State per student clock hour by $3. This would result in a more comparable position, especially for SLCC, in both Figures 2.1 and 2.2.

Indirect Costs

The auditors also acknowledge some of the added indirect costs at USHE institutions on page 16 following Figure 2.6. With the many differences in the missions of the two systems, and the lack of

information at some ATCs, these cost comparisons tell an incomplete story. USHE institutions provide a wide range of services - both to the student and to the State – relative to their expected public service and student services roles. These services range from financial aid offices to larger and more diverse resources within libraries, counseling and career services centers, etc., all of which provide support for students. The concern that USHE has with comparing indirect costs is two-fold: (1) the lack of information for some ATCs as noted in the report, and (2) comparing these costs in isolation without taking into account the resulting additional services and value to the students.

CEU and Snow College CTE

Snow College and CEU offer accessibility to CTE programs for rural residents, even though fewer students are enrolled in these programs, thus contributing to a higher cost per student clock hour than more urban CTE programs. There is a benefit provided by having accessible educational opportunities to citizens of the state of Utah though costs per student clock hour are higher.

Also, historically, there were cost savings in merging both the Southeast ATC (Price) with CEU and the Central Applied Technology College (Richfield) with Snow College. The merger eliminated some duplication of effort and made the programs more cost efficient.

There were additional benefits to the mergers such as CTE being offered for credit through Snow College to the Richfield service area, and also better protection from fraud due to the business staff sizes and resources at the colleges. Also, as recognized in the audit, page 8, Snow College does offer CTE to the prison population which would reflect a lower cost per student clock hour.

Efficiencies

Though the audit didn't address the long-term efficiencies of either program, it should be noted that a college education and degree give more options for a student for career advancement and mobility. This does not discount the important role of the ATC, which is to get a student trained and employed quickly into an entry level position. Nevertheless, a person who has received a certificate from an ATC often ends up returning to college for a degree in order to advance in their careers. Long-term efficiencies are not discussed in the report but we believe they should be. CTE for credit at a college campus, meeting certain standards, will be recognized by institutions if they decide to move forward with more education. At an ATC, these courses may be recognized but only if there are articulation agreements with the credit-granting institution.

2007 USHE Study of the Organization and Delivery of CTE in the Salt Lake Area

The cost methodology of the USHE 2007 study and the student clock hour methodology used in the audit both show that CTE is less costly at SLCC than at Salt Lake Tooele ATC, though by a lesser cost margin in the audit. The 2007 USHE study examined costs from a full-time equivalent (FTE) student perspective. The conversion factor used in the USHE study was 900 membership hours per FTE student. Though the auditors chose to use a different conversion factor, USHE used a nationally recognized standard for conversion purposes. The 900 membership hours per FTE student has traditionally been used in USHE for comparison with clock-hour programs.

According to a UCAT document, 30 ATC clock hours (membership hours) are credit equivalent to one college semester credit hour. The 30 to one ratio is typically used for financial aid purposes. The UCAT report states, "credit equivalents are in no way intended to be a measure of seat time, but rather as a means to equate the value of the educational attainment of students in both a credit and non-credit environment." Further, this document explains that this conversion factor is "consistent with U.S. Department of Education's definitions for financial aid."

Conclusion

We thank the auditors once again for allowing us to respond to the audit. We would ask the Legislature to consider the many factors that drive costs for higher education institutions and the differing missions of the various educational enterprises as outlined in the audit response. We look forward to continuing to work with the Legislature to provide the highest quality of education at the most affordable cost possible.