

**New Program Directions for Georgia Technical Colleges:
Stakeholder Views of Emerging Program and Labor
Market Needs**

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Introduction

As part of a larger study of the emerging trends, models, and new approaches to technical education program development, this report focuses on the perceptions of key technical college stakeholders regarding new program needs related to changing labor market demands in the state or regionally. The purpose of the study was to identify areas where programs should be developed or changed to better meet emerging needs for skilled workers in high growth industries and occupations in the regions served by technical colleges. These local and regional needs often are not reflected well in the state, national, and international trends and predictions from the broader literature on workforce development. This study provides a closer look at the front line information and trends that affect decisions about program content, structure, or delivery of technical education based on employer requests and changing regional labor market needs throughout Georgia, now and in the future.

Methodology

Information was gathered from participants through an individual structured interview process. A researcher from the Occupational Research Group at the University of Georgia contacted each participant by telephone or e-mail and explained the purpose of the study. A survey questionnaire was developed which included a series of open-ended questions about new program directions and future business and industry needs in the next three to five years, as perceived by the respondent. Questions were developed with input from DTAE staff in the state Office of Technical Education and project staff from the Occupational Research Group at the University of Georgia, based on a review of the literature on future trends in workforce education. The interview questions were as follows:

1. Where do you think the greatest employment growth will be in your region in the next five years? Industries, occupations, job levels, skills, etc.?
2. What national or state labor market trends or futurist's projections do you see as most relevant for training and education needs of your service area?
3. What new jobs do you think will exist in the future that do not exist now? What skills will be needed? How will this effect the way postsecondary technical education is structured and delivered?

4. What new program offerings have been most often suggested/requested by employers in your area?
5. What programs do you need/want/plan to offer in the next five years at your technical college/institute?
6. Which programs are in most need of being updated or revised? Why and how?
7. Do you know of community/technical colleges in any other states that offer model or innovative programs you would like to see in Georgia?
8. Is there anything else you would like to address that could enhance the future of Georgia's Technical Colleges?

Following the initial telephone contact, those agreeing to participate in the interview were sent a list of the eight survey questions and asked to respond to each question by return email. Participants were asked to base their responses on their experiences with employers in their technical college's service area.

The sample of participants from technical colleges in the state was selected to ensure a balance of technical college and service area demographics including urban, rural, suburban geographic areas; large, medium, and small enrollments; and leadership representatives from a range of positions within the technical colleges. State staff from DTAE suggested contacts at several technical colleges. Participants included key administrators in academic affairs, economic development, and senior level leadership roles within each institution. Twelve participants were contacted and ten individuals responded to the survey questions which are presented in the next section of this report.

Findings

Following is a summary of the responses from each participant to each of the eight questions sent out in the survey. The responses are organized by question, with the complete comments from each of the ten respondents identified under each question category. A summary and discussion of each question follows this section on the presentation of respondent comments.

Question 1: Where do you think the greatest employment growth will be in your region in the next five years? Industries, occupations, job levels, skills, etc.?

A -- Employment growth in the next five years will be in aviation maintenance, information technology, allied health, customer service, child care, electronics,

and telecommunications industries. All of these except customer service will require specialized skills. Positions available include entry level and lifelong learning opportunities will pave the way for significant career advancement in these areas.

B -- Employment growth: employment growth will occur in three major areas:

- Industrial development. Existing industries will expand their physical plant and new industries will continue to be attracted to the area because of favorable labor resources, good water supply, and excellent transportation infrastructure. Land costs are still reasonable and local governments actively seek new industrial development.
- Construction industry: The suburban expansion continues to move eastward from Atlanta and Dekalb County. Rockdale County continues to experience a fast pace of residential and commercial development for shopping centers and new homes. Newton County is also feeling the effects of this eastward expansion and conversation with the City of Covington planning department officials indicates that local planning agencies anticipate accelerated growth in the next five to ten years.
- Service industry: The development that follows I-20, particularly for the commercial sector, results in the opportunity for more employment in the service industry. A good example is the City of Conyers where, in the last five years, the growth of retail and restaurant establishment has literally exploded. A new mall is currently under construction in Rockdale County adjacent I-20 and will result in the creation of hundreds of new service industry jobs.

C – Greatest employment growth in the next 5 years will be in: process mfg. operators and maintenance workers (to replace retirees), computer related jobs with emphasis on vendor certifications (increased business use of computer applications and changing software), Web design/hosting/training/search techniques (increased use of Internet), e-commerce techniques /web-based marketing, electronics/telecommunication (infrastructure for e-commerce and Internet uses), warehousing/material handling/trucking (port opening in Brunswick), power distribution/generation (need for additional power), health care/nurses/nursing assistants/attendants (aging population), customer service/hospitality (growing leisure time), welders (increased sales of metal fabricated items), machine tool operators (continued shortages), heating and air conditioning (to support expanded hospitality and leisure industry), law enforcement (increase in incarceration rate).

D – We have traditionally been a farming and manufacturing region. Our farmers are having a terrible time with the drought. In our rural surrounding counties many of our manufacturing plants were low skill (many cut-and-sews) that have sent jobs off-shore for even cheaper labor. However, we also have several of the large global manufacturers like Merck and Proctor& Gamble. They continually work with us to upgrade the skills of their employees in hopes of remaining

competitive and profitable. We hope they will at least sustain employment. They do continually upgrade and automate, so the skill level required continues to rise. Also, the skilled workforce is aging – many would have retired this year had the stock market not turned so ugly. I think we will see more growth in the service industries. We often speak with people who are looking for sites for call centers. We just received state funding to continue progress with a riverfront initiative that includes building a major convention center and additional hotels. We also have a Marine Corps logistics base here, which is critical to our economy. At their urging, the Chamber of commerce folks have undertaken a major e-commerce initiative – to attempt to become a regional center for e-commerce ... with the downturn in the economy, I don't know what will happen to that. Our region beyond Albany is a pocket of poverty in the state. We continually deal with adult literacy needs before we can successfully train people in high skill related positions. However, our industries are working with our school systems to provide an interactive distance learning model that will allow us, among other things, to electronically bring in high level math and science teachers for our areas where we cannot attract teachers. We don't yet have the infrastructure in those areas to provide Internet courses.

E -- E-commerce will prosper due to the location of a major distribution center for six southeastern states. Second, will be in the paper recycling industry. And finally the medical field with a Veterans Hospital and also a major HCA facility located in our service area. The hardest positions to fill will be those of mid-level management and the highly skilled, self-motivated individuals. Key occupations to support any industry will be in the maintenance of the infrastructure and maintenance of the equipment in any industry. Some industry has expressed a great need for engineering graduates to locate in this area.

F – Greatest employment growth areas will be in the specialized manufacturing, specialty services (call centers, etc), and high tech manufacturing. Skills needed will vary from unskilled material handlers to skilled automated manufacturing workers. Along with each growth area we will see an increase in accounting, business and office, and computer related skills.

G -- Warehousing (distribution and materials management), customer service (retail, hospitality, financial services), consumer health services, professional training

H -- Service continues to be strong in our area. The strongest area of employment, however, will continue to be in agriculture related occupations (industrial, processing, growing, service)

I -- The greatest growth over the past five years has been in the service industry. There is nothing to indicate that this trend will change over the next five years. Computer information technology will be a large part of this continued growth. Program design, systems analysis, database management, networking,

installation, repair and maintenance will all play a part as computers continue to become central to business operations. Call centers will continue to grow and expand as more companies become dependent upon decentralized operations and quick and easy support to consumers. Health care will eventually take the lead in the growth in services. Advanced medical technology, expanding opportunities in the medical field, and an aging population with increasing expectations for medical support will support growth in this area. Manufacturing will continue to grow but at a much slower pace than services. As long as the Georgia carpet industry can protect its place in the textile industry, it will be the single exception to the dramatic decline in textiles. The growth in manufacturing will come in light industry including plastics processing and paper products manufacturing. Construction, transportation, and retail trades will continue to grow as long as the Georgia economy continues to expand. These areas will eventually stabilize, leaving the service industry as the growth opportunity for the state. Specific skill requirements in IT include computer engineers, systems analysts, database administrators and computer support specialists. Skill requirements for call centers will focus on customer service representatives. Health care will include physical therapists, medical assistants, occupational therapists, personal and home care aids, and medical records technicians.

J -- We feel that the health care industry in general and LPN and RN nursing especially, are areas of extraordinary growth potential. The K-12 education arena, including early childhood is another. Lastly, broadly trained industrial technicians seem to be in great demand but with the emphasis upon broadly trained. Finally and this theme will run throughout this response, all employers want employees who can read, write, speak, and think critically. They also stress the need for those employees to be able to collaborate, create, solve problems, communicate, and lead. This is because neither they nor we know the answer to question # 3. What we do know is that a well- educated graduate from our colleges will be adaptable to a variety of new learning situations.

Question 2: What national or state labor market trends or futurist projections do you see as most relevant for training and education needs of your service area?

A – State labor market trends most relevant in my service area include the increased need for specialized telecommunications and information technology. Additionally, a growing population of aging Atlantans and increased childcare needs require more emphasis on childcare and allied health worker training.

B -- Labor market trends: The most relevant national and state labor market trends that impact training and education in our service area is the continued need for technicians and craftsmen/women. Input from local advisory committee members for business, industrial technology, construction, and computer information systems programs all point to a labor market need for people with

less than a baccalaureate degree but training in technical certificate, diploma, and associate degree programs. This industry input reflects the national and state statistics and labor need projections.

C – Relevant trends are:

- 1-Leisure oriented business to be half of US GNP by 2015
- 2-Increased use of telecommunications
- 3-Increased business training budgets
- 4-Outsourcing Human Resources functions
- 5-Increased use of distance learning techniques for training
- 6-Increased Internet use by businesses and individuals
- 7-Increase in median age of population
- 8-Worldwide shortage of Information Technology workers
- 9-Use of biotechnology in new products
- 10-3D computer controlled mold manufacture
- 11-Computer integrated business techniques
- 12-Audio, data, and video use of same telecommunications lines
- 13-Increase of wireless communications/data transmittal

D -- Of course, technology training is the hottest item. Our Computer Information Systems (CIS) classes have waiting lists. All our certification programs (A+, MCSE, CISCO, etc.) are filled to overflowing. We are also experiencing a great demand in our customized training for business and industry in this area. We are seeing a trend toward shorter programs. We continue to see business and industry place more value on what a student can do rather than what credential he has.

E -- Developing standardized test (training?) to help companies grow and develop mid-level to upper level management staff from within the specific company. The "grow your own" concept is growing rapidly due to the inability to go outside and recruit.

F -- I feel that the re-tooling of textile and low skill labor sources will be a significant trend. We expect a 4-6% decrease in textile manufacturing. The challenge will be the ability to re-tool these individuals in a highly demanding skills-based workforce.

G -- The increasing importance of professional technical certification (MCSE, A+, Web+, Oracle, etc.) in order to obtain attractive, high-paying jobs; many of our industrial jobs continue to be lost due to off-shore factory relocation (we have lost many jobs in textile/carpet manufacture for this reason) and the service sector jobs replacing them have only a fraction of the economic impact on the family and community as the jobs lost.

H -- We use DOL information along with about twenty other data bases kept current for us by Dr. Harmon Fowler. Dr. Fowler is our strategic planning consultant.

I -- This answer ties in with the first question. Without doubt, training and educational needs center on IT, health care and service centers, but includes other areas to a lesser degree. Certification programs will be the trend that defines the educational direction to support these fields. In information technology, Cisco, A Plus, MCSE and CNE certifications will be relevant. In health care, RN, LPN, radiological, respiratory, surgical and similar certification programs will be essential to success. In Georgia, Certified Customer Service Specialist (CCSS) will become the recognized standard for entry into the service industry. Other areas include mold making, machine tooling, electronics and industrial maintenance to support manufacturing along with child care to support two family workers.

J -- We listen to the usual gurus: Peter Drucker, Mervin Cetron, The Rand Corporation, STAMATS college marketing and research, The U.S. Department of Labor, Corporate white papers such as IBM and Microsoft, and we employ a fairly regular scan of the forecasting literature.

Question 3: What new jobs do you think will exist in the future that do not now exist? What skills will be needed? How will this effect the way postsecondary technical education is structured and delivered?

A -- New jobs will be related to the ever-changing information technology and telecommunications industries. As these industries become more sophisticated so will the technology training requirements and career outlook.

B -- New jobs: Covington Campus has experienced a blurring of the boundaries between the Computer Information Systems (CIS), Electronics, and Industrial Maintenance programs. Local industry has installed automated manufacturing production lines that link computers to all facets of the design, production, assembly, packaging, and shipping processes. Consequently, there has developed a need for technicians to operate and maintain these complex systems who are cross-trained in several disciplines. For example, our school will offer CISCO training beginning in the Spring Quarter, 2001. The faculties who will teach this course include instructors from the Industrial Maintenance, Electronics, and Computer Information Systems programs. Students from each of these program areas will enroll in CISCO and other networking courses. The Electronics Technology faculty currently teaches the A+ and Network+ courses to CIS and Industrial Maintenance students. Local industry continues to send students to Covington Campus for specialized training. For example, plant electricians may take a networking course to help them better understand how troubleshooting can best be planned for a system that includes a computer network, robots, hydraulic and pneumatic systems, sophisticated motor controls such as PLCs and microcomputers. The jobs of the future will be multi-disciplined in nature, will require continual updating of skills, and will require

postsecondary education to be flexible to include a philosophy of "just-in-time and just-enough" training packages. Technical Certificates of Credit must become the basic training unit and will wrap around industry certification standards and requirements. Several TCCs linked together will result in completion of a diploma or a degree program.

C -- New future jobs will include:

1-Nanotechnology Technician/Troubleshooter

2-Gene Technician

3 -Zero-point Energy Technician

4-Anti-matter Generator Operator

5-Anti-gravity vehicle technician

6-Automated Airplane Technician

D -- Postsecondary technical education has been successful because we have focused on quick turnaround in offering training as needs arise in business and industry. This will become more difficult as completely new skills evolve that we have to train our own folks in before they can train others. We will have to continually sell the policy makers on the value we provide to ensure funding is available to provide the quick turnaround industry has come to expect.

E -- Technology related positions to support infrastructure of various companies. The hands-on skills to trouble shoot and make repairs on equipment will be critical. Technical education is posturing itself to be in the position to deliver these skills because the schools are proactive and stay on the cutting edge to stay flexible.

F -- Technological advances for manufacturing, especially in our area. Electronics, automated manufacturing, waste and pollution, hazardous materials, etc. We are prepared to move into this arena now. However, should we become too rigid it might be difficult to be flexible enough to meet the demand

G -- Internet instruction brokers will be needed to focus a client's need for education/instruction to the platforms that meet an individual's training needs. More and more postsecondary institutions will be engaged in on-line instruction. I do feel there will be a backlash to this trend in four to five years as employers (and students) come to realize that the level of technical comprehension and retention in on-line courses is significantly inferior to that gained in a more traditional learning setting.

H -- I believe that the IT industry will continue to cultivate jobs in the future that we can't see today. Many of those will, in our area, be related to agriculture and

the concept of scientific farming. Technology continues to creep into what was formerly very simple farm equipment. To prepare students to work in these fields, our current CIS, Electronics Technology, and Industrial Maintenance Technology programs teach basics that will enable students to enter technical fields for which additional industry specific training will be required.

I -- New jobs will emerge as the entire communication system changes. The traditional phone system will decline or disappear all together. Cell phones will make traditional phones obsolete. Cell phone functions will greatly expand to include Internet, fax, pager, voice and script messages. Phones will tie into computers and computers will become wireless. Phones and computers will tie into televisions as TVs become information, communication and entertainment centers. TV programming will be customized as computers pull programs from the Internet to meet individual time and program preferences. The medical industry will continue to become more and more high tech with breakthroughs in both procedures and treatment. Industrial equipment will become more and more automated through the use of PLC, CNC and computers. These changes will create new and expanding opportunities in research and development in all fields. Technical skills will be critical. Research and development will remain the domain of BOR research universities. But technical skills acquired in DTAE technical colleges will be essential to support, repair, maintain and operate these high tech developments. Technical colleges will continually upgrade equipment to remain on the front edge of technology. Delivery will be a combination of small classes with hands-on training on complex and highly technical equipment, increased reliance on computer based simulation training, along with continued expansion of GVTC web-based instruction.

J -- It has been said that "forecasting is very difficult, especially with respect to the future." New jobs are evolving so fast that it is almost impossible to predict. It is now predicted that "the average student will work at four to six jobs in the first ten years after graduation". (July-August Futurist, Richard E. Herman) We feel that a closer marriage of the technical and liberal arts is essential if our students are going to be able to compete. A related area to this is the growing demand for graduates who possess third party or vendor certification such as Microsoft, APICS, ASQ, etc. We live in a day when this type certification is almost more important than the degree.

Question 4: What new program offerings have been most often suggested or requested by employers in your area?

A -- childcare, aviation maintenance, telecommunications and dental hygiene.

B -- New programs requests fall into several categories:

- Industrial technologies: PLC and motor control training are a continuing need because of the rapid change in the technology in the manufacturing environment.
- Medicine: The Newton/Rockdale/Morgan Counties service area will continue to experience shortages of qualified Registered Nurses and lab technicians.
- Construction: The rapid growth of residential and commercial construction will require new programs for the basic trades, e.g., carpentry, plumbing, electrical, masonry, HVAC.
- Business: Paralegal and criminal justice programs will be required to meet existing shortages of qualified people in these two occupational areas.

C – Most frequently requested programs are:

- 1-Management/Supervision
- 2-Registered nurse
- 3-building maintenance
- 4-Home repair technician
- 5-Household cleaning technician
- 6-Theme park technician/guide

D -- I would have to say the technology training is the most requested these days (after adult literacy training for older employees who need to learn new skills...) We've also had requests for Quality Auditor, Applied Manufacturing, and Medical Services Technician, to name a few of our newest short term programs. Industries are asking for programs to be developed for skills training so that students can get HOPE dollars. This allows them to spend training dollars on other aspects of the business.

E -- Leadership Skills Training, Technical training, and Personal Development training.

F -- Industrial maintenance, hazardous materials, law enforcement, WORK ETHICS and job skills.

G -- There is a great need for the "semi-professional" technician for work in the construction and infrastructure industries (HVAC, electrical, telecommunications); however, there are no students entering the technical college system who either desire to enter these fields or who have the basic educational background to succeed in them. The "ideal candidate" sought by employers are kids who are actually enrolling at GA Tech or UGA. A majority of the students entering the tech colleges these days do not possess the basic quantitative, analytical and communication skill level desired by these employers.

H -- Warehousing/Distribution, Criminal Justice, Early Childhood Development/Care, various allied health programs, truck driving, Management and Supervision.

I -- Additional programs have been requested in computer information technology, health care, child care, CCSS, plastics training and diesel mechanics. Along with requests for these specific hard skills, more companies are looking for trained employees in soft skills including analytical and problem solving, team building, oral and written communication, conflict resolution, and general work ethics. The global market and international standards through IOS and QS are driving the demand for skills to support quality initiatives and participation in continuous improvement programs.

J -- Nursing, expansion of LPN and addition of RN associate degree. Dental Hygiene & Assisting, all of the allied health areas really, PLC training, IT software training.

Question 5: What programs do you need, want, or plan to offer in the next five years at your technical college?

A -- Expanded aviation maintenance, dental hygiene, and information technology certification programs.

B -- New programs for the next five years: Covington Campus will expand its Certified Construction Worker program to include one or possibly two specializations in carpentry and another construction occupation. A program in Ornamental Horticulture will be added if funding is available from State Department sources. Paralegal and Criminal Justice programs are currently working their way through the College and State Board approval process. Continued emphasis on dual enrollment of high school students in all program areas will occur.

C -- Programs to be offered in the next five years are:

- 1-All current programs
- 2-Management/Supervision
- 3-Organizational change techniques (teams, employee involvement, etc.)
- 4-Law enforcement
- 5-Hospital, nursing home attendant
- 6-Recreation/Physical training
- 7-Forestry/Logging-equipment operation
- 8-Warehousing/Logistics
- 9-Lean manufacturing/Just in time mfg.
- 10-Quality improvement/World class manufacturing
- 11-Lab technician (measurements)
- 12-Speciality advanced technology manufacturing technology (stereo lithography)
- 13-Tool and Die /Plastics technician
- 14-Visual imaging technician

D -- We will be focusing on the technology certification programs. We are currently sending instructors for professional development in the technology programs and also in offering the courses on-line for easy access for students.

E -- Leadership Skills Training, Technical training, and Personal Development training.

F -- Hazardous materials, wastewater management, law enforcement, environmental science, and environmental horticulture, fire science.

G -- Heavy Equipment Operator (certificate), Oracle Database Administrator (certificate), Medical Assisting (diploma with certificate options)

H -- Warehousing/Distribution, Criminal Justice, Early Childhood Development/Care, various allied health programs, truck driving, Management and Supervision.

I -- Programs are needed to support career fields identified above. IT and medical certifications, pharmacy technician, plastics industry training and diesel mechanics will be added or expanded. Programs to support leisure activities including horticulture, landscaping and garden center management as well as other programs to meet the demands of an older population.

J -- Associate Degree RN, Dental Hygiene/Assisting, Paralegal, Systems Analyst, Cardio-Vascular tech, Geographic Information Systems, and advanced certification programs beyond the associate's degree.

Question 6: Which programs are in most need of being updated or revised? Why and how?

A -- Information Technology and Allied Health programs are most in need of updating. This is primarily due to changes in technology and changes in professional accreditation for allied health programs.

B -- The Computer Information Systems, Industrial Maintenance, and Electronics programs are all in need of major revision. These programs have not received a major curriculum review in the last five years. The program specialists at the State Department Level have resurrected the IFCC process and faculty is meeting at both local and state level to update these programs.

C -- Any programs based on computer technology will require constant revision.

D -- We have advisory committees made up of community volunteers in each industry. All programs have to be continually updated and revised because of technology. Even our Diesel Mechanics, Automotive Technician, and Printing and Graphics programs have undergone major changes in the last few years.

E -- General education and unskilled training for the general public. Should the economy go sour, these positions will be the first to be discontinued or laid off due to the nature of being unskilled in any specific area.

F -- Business and Office Technology. This program is too long for the skill blocks requested. It seems that individuals attending the program are more interested in individual skill blocks rather than the diploma or degree. I see this program changing. I think the CIS program needs to be expanded. I also feel that all programs need to be reviewed for the contact hours. Many program contact hours are too long and do not lend themselves well to the students attending our schools. The long contact hours seem more conducive to the old tech school model. This puts us far behind where we need to be today.

G -- Computer Information Systems because of the rapidly changing technology and increasing focus on Internet and manufacturing certification; at DTAE we revise our programs using the Instructional Faculty Consortium Committee (IFCC) process involving both state and local professional Advisory Committees and program faculty.

H -- Programs: CIS should be updated yearly, rather than every three years.

I -- There is a continuing need to maintain current technology in computer information systems including certification programs, in medical training programs including both instruction and equipment, and in machine tool technology and industrial maintenance to meet the changes in electronics, PLC and CNC.

J -- CIS is always in need of being revised. This is a problematic area because the colleges must wait on the entire system to update curricula, effectively forcing every institution to the same level.

Question 7: Do you know of community/technical colleges in any other states that offer model or innovative programs you would like to see in Georgia?

A -- None mentioned

B -- Pennsylvania offers a model program that trains teachers in trade and industrial programs for high school, college, and industry education positions. Students enroll in two-year associate degree programs at community colleges. Upon completing the degree and an internship period, the students transfer credit into the Board of Regents universities to complete their baccalaureate degree in education. Pennsylvania is in the enviable position of supplying T&I teachers to local high schools and technical colleges and business and industry to replace

retiring educators who are leaving the field. A partnership between technical colleges and the university colleges of education are needed in Georgia to replace retiring teachers and teachers lost to attrition.

C -- In all honesty, we would not be interested in using plans from the other states or foreign countries that we know about.

D -- I've just returned from the American Technical Education Association (ATEA) conference (that's why I'm so late in responding to your questions) and found that Georgia really seems to be leading the pack. Our standardized curriculum is a critical piece of our success.

E -- Not aware of any.

F -- I have visited many other states and schools across the US. It is my opinion that we are the model system and they could benefit from our Technical College system. The only suggestion I would make is related to teacher education. I feel we do not do an adequate job of teaching individuals to become Technical College Instructors. The education they receive today makes them lecturers but this format does not lend itself well in the Technical College setting; at least as a single methodology.

G -- I am not aware of any, but then I do not get out much.

H -- No, however, the most innovative, industry driven programs I've seen were those linked closely with apprenticeships in the heavy growth areas of south Florida.

I -- I am not familiar with programs in other states and can offer no suggestions or recommendations.

J -- Miami Dade with the community college baccalaureate, Maricopa and other bell weather institutions such as the League for Innovation colleges.

Question 8: Is there anything else you would like to address that could enhance the future of Georgia's Technical Colleges?

A -- Seamless education and transfer of credit.

B -- no response

C -- No comment.

D -- I do think we have positioned ourselves to meet the future needs, as they surface.

E -- Not aware of any.

F -- We need to stay focused on Workforce Development and not get too caught up in the general education/college mentality. I feel to move too far in that direction might take away some of our flexibility and therefore we would not be able to meet the changing demands of business and industry.

G -- In our rush to become colleges, let's not forget that our primary mission is workforce development.

H -- As much as many of us don't want to do it, I believe that attainment of SACS/COC accreditation would be beneficial to our colleges in the future. It would allow students from COE colleges much more flexibility.

I -- There are several issues that will impact technical education, both positively and negatively. They include:

- Adjunct faculty. Because of budget constraints, technical schools are forced to rely too heavily on adjunct faculty. That approach is appropriate for short notice classes that develop as a result of heavy demand. Adjunct faculty are contracted to meet that need. However, when adjunct instructors are used quarter after quarter for years with no benefits, the approach becomes an abuse of personnel. A way is needed to ensure quality instruction while also ensuring equity of pay, benefits and recognition.
- Quality instruction. In technical areas, it is very difficult to locate quality instructors with the right combination of technical expertise and instructional ability. Those persons with the technical background demand salaries much higher than available in technical colleges. The issue is further compounded with the requirements of COC that require instructors with advanced degrees. Many technical instructors have specialized training but not necessarily advanced degrees. A way is needed to acknowledge technical training and experience and still meet the requirements of COC.
- Formula funding. Formula funding is seen as the answer to all problems, but it must be recognized as a two-edge sword. It brings in funds as enrollments increase. However, the formula provides for a two-year lag before funds are received, which means that instructional constraints can continue even under formula funding. It works well with increasing enrollments, but what happens when enrollments are declining? What happens when the economy cannot support the formula? Finally, the formula brings funds to DTAE, not necessarily to individual colleges in accordance with the formula. How will high maintenance programs like flight technology impact other high demand but less costly programs? Formula funds are a step in the right direction but not necessarily the answer to all problems.

- Georgia Virtual Technical College (GVTC). GVTC offers a new dimension to technical education. Within five years, it has move from a pilot program in seven colleges to a fully supported program in all thirty-three colleges. It offers great potential to meet demand for programs along with the flexibility needed by working students. The GVTC slogan of “any time and any place” speaks to the advantages of this innovative approach to technical education. GVTC is an excellent example of need and opportunity being met by technology.
- Credit transferability. Reconciliation of the issue of credit transfers from DTAE colleges to BOR universities is needed to improve both systems. BOR universities should focus on four-year and advanced degree and move away from developmental studies programs. DTAE colleges should take on the responsibilities for developmental studies, associate degrees as terminal degrees, and associate degrees as a gateway to Georgia universities. With accreditation for all programs provided by COC, justification for each course and each program should not be needed. There is a great opportunity for support and cooperation that requires working together in a spirit of trust and respect. DTAE colleges, BOR universities, Georgia students and the Georgia educational system all stand to gain from this approach.
- DTAE focus. With the name change from institute to college, there may be a tendency to shift focus to associate degree programs. The Commissioner has been very clear in stating that the name change does not change our mission or our focus. DTAE technical education centers on adult education, customized training for businesses, technical diploma and certificate programs, as well as associate degrees. There is a continuing need for education in all of those technical areas. However, we cannot focus on associate degrees at the expense of adult education students. Nor can we emphasize adult education to the point where we cannot attract degreed students. It will require a fine balance that is absolutely essential to meet the broad technical educational needs and opportunities within the state.

J -- no response

Summary and Implications of Findings

Greatest Employment Growth in Region in Next Five Years (Q1)

Respondents represented a broad sample of geographic regions in Georgia and this diversity was evident in the responses to the questions about employment growth. Many responses reflected local developments in business and industry unique to that region. For example, some discussed the change from a primarily rural agricultural and low-skill manufacturing economy to one where large global manufacturers are seeking employees with upgraded skills. Military installations affected occupations needed in some areas, and specialized industries such as paper processing or warehouse distribution centers require trained workers in other regions of the state. Urban/suburban expansion and population growth has impacted employment in other areas, creating needs for residential and commercial construction workers, transportation related jobs, and workers for expanding retail, restaurant, hotel, and other service establishments.

Several respondents mentioned specialty customer services (call centers), specialized manufacturing, and service industries generally as key growth areas. Electronic commerce and computer related jobs with an emphasis on vendor certification were mentioned by several as growth areas in the future, along with maintenance of infrastructure for high tech manufacturing and telecommunications. Specialized skills in IT areas like systems analyst, database administrator, and computer support technicians were seen as high growth.

The health care industry also was seen as a major area of employment growth by a number of respondents, particularly services for an aging population and for child care, as well as nurses, PT-OT therapists, and home care aids.

Manufacturing is expected by respondents to grow at a slower pace, but will increase in light industry such as plastics and paper, requiring machine maintenance workers. The carpet industry may be an exception to the decline in textile industry jobs, according to one respondent.

Labor Market Trends and Future Projections Affecting Program Development (Q2)

The most significant trend identified by respondents was the increasing reliance on IT vendor certification for specialized technical programs in the information technology, computer, and telecommunications fields. Computer technology training needs appeared to be paramount for nearly all of the respondents. Customized training programs for business and industry, and shorter programs

culminating in an industry credential (A+, MCSE, etc.) seem to be in highest demand to prepare workers for high paying jobs or to enable them to keep up with changing technology demands in current jobs.

Certification also is seen as essential for employment in the health care field, as well as in more broad-based areas such as customer service. Several respondents also mentioned programming to address needs of an aging population (health care, leisure services) and working families (child care). Information technology, health care, and service were seen as the growing areas for programs.

Future Job Skills and the Delivery of Technical Education (Q3)

The impact of technology on the content, structure, and delivery of postsecondary technical education in the future was clear in responses to this question. Several respondents commented on the technological changes in fields such as communication systems (cell phone, wireless technology, blend of phone-TV-computer systems), the medical industry (high tech procedures, equipment, and treatments), agriculture (scientific farming), and noted the increasing automation of industrial equipment (PLCs, CNC, computer uses). Technical skills and technician level training were seen as critical to support, repair, maintain, and operate this increasingly sophisticated high tech equipment and infrastructure.

It was also pointed out that the lines between traditional program curricula are becoming more irrelevant as jobs of the future require multidisciplinary skills, pulling together cross-discipline training (e.g., computers, electronics, industrial maintenance). Technology and IT developments are driving future jobs and the technical education needed to fill them. Employers are requiring vendor certification in IT across many of the diploma and associate degree programs offered at the technical colleges.

Some of the implications of these trends for program structure and delivery include an increasing reliance on Internet/web-based on-line delivery of instruction and use of computer simulation training software. Flexibility and the capability to provide short turnaround "just-in-time" training for business and industry were seen as critically important for the future success of the technical colleges. One respondent suggested that TCCs should be the building blocks for a curriculum, allowing students to build a customized program to meet multidisciplinary, specialized job skill requirements, or linking TCCs to lead to a diploma.

Hands-on training with cutting edge equipment was also mentioned as an important component of technical education. Third party certification of skill

mastery is becoming increasingly common, and one respondent predicted this might soon be more important than a college degree.

New Programs Most often Requested by Employers (Q4)

New program requests from area employers varied widely among respondents. In addition to the specific programs summarized below, several respondents mentioned that employers are looking for workers with non-technical as well as technical skills – a “semi-professional technician” or workers with quantitative, analytical, problem solving, team building, and communication skills. International standards are driving the demand for skills to support quality initiatives and continuous improvement in many fields. Adult literacy needs were also identified as a need of industry.

Following is a listing of the specific program areas identified by one or more of the respondents as high demand job areas for their region of the state:

Health and Human Services: child care, dental hygiene, dental assisting, nursing – LPN and RN, law enforcement, paralegals, lab technicians, medical services tech

Industrial Technologies: industrial maintenance, hazardous materials, PLC training, plastics tech, diesel mechanics, applied manufacturing, warehousing/distribution, truck driving

Business/IT: management/supervision, computer information technology, infrastructure industries (HVAC, electrical, telecommunications), quality auditor, leadership skills and personal development training, theme park tech/guide, household cleaning

Construction trades: residential and commercial construction, home repair tech, building maintenance

Programs to be Offered in the Next Five Years (Q5)

Responses to this question ranged widely across many program areas, including a mixture of environmental, public service, health care, advanced manufacturing, information technology certification, management, law enforcement, warehousing, wastewater, recreation, trucking, and construction programs. No single clear area of growth was evident and responses reflected current programming and local or regional employment needs which varied widely.

Programs Most in Need of Updating (Q6)

Nearly every respondent identified the computer information systems and information technology programs as being the primary program areas needing current and continuous updating to reflect technology changes. Industry certification in the computer field is increasingly important and requires that technical college courses meet the latest requirements for certification.

The second area mentioned frequently was allied health programs, due to changes in professional accreditation requirements and technology used in medical practice.

A third area of programs targeted for updating was the industrial technology programs such as electronics, machine tool, and industrial maintenance. Again, the critical need to keep up with changes in technology drives these curriculum changes.

Several respondents pointed out DTAE's use of the IFFC process and involvement of state and local advisory committees to update programs. Problems in this area included the slowness of the statewide curriculum revision process, the length of time since last changes were made, and the need to review/reduce contact hours in some programs (e.g., business and office technology). Because of the rapidity of technology changes, particularly in computer fields, annual program revision (rather than every three years) was recommended.

Innovative Models from other States (Q7)

Most of the respondents were either not familiar with what other states were doing, or they were convinced that the technical colleges in Georgia were already the leaders in innovation and did not need to look elsewhere. One mentioned programs at Pennsylvania universities that articulated with community colleges and provided technical educators to high schools to replace retiring teachers. Another mentioned the need for more teacher education in Georgia for technical educators. Two respondents pointed to Florida colleges and their apprenticeship program, as well as other League for Innovation colleges as sources for model programs.

Issues Affecting the Future of Technical Colleges (Q8)

Technical colleges are continuing to redefine core mission for the system. It was clear that respondents were struggling with the effect of the changing identity of technical colleges tied to their recent name change, SACS/COE accreditation, and credit transfer issues. Several expressed concerns that the broader workforce development role of DTAE that has been a hallmark of the system

would receive less emphasis as technical colleges focused on associate degrees and credit transfer to BOR institutions.

Flexibility was seen by several as a critical and much needed characteristic of the technical colleges. This flexibility included responsiveness to changing needs of business and industry, increased options for student enrollment in transferable credit courses, use of technology to provide “any time and any place” delivery of instruction through Georgia Virtual Technical College, and a balance in providing lifelong education to adults with diverse needs and interests.

Some of the problem areas in the future identified by one respondent included concerns about instructional quality, tied to heavy reliance on adjunct faculty and technical instructors with specialized technical knowledge but limited pedagogical training or experience. Another concern was related to the limitations of formula funding in situations of low or declining enrollments.

Conclusions

Responses to the survey questions generally indicated a strong understanding of the local economy by those with responsibility for developing workforce education programs at the technical colleges in Georgia. Many of the trends in employment and future jobs paralleled the predictions in the futurist literature on workforce development. It also was clear that local economic conditions made it imperative for colleges to be able to respond with both short and long term programs that targeted employment needs unique to a particular region of the state. The flexibility of technical colleges which enables them to respond quickly to changing workforce demands and new technologies seems to be an important factor in their success as key workforce education providers. Both structural responses such as customized, short term training programs and cross-training approaches, as well as on-line Web-based delivery of education and training, were critical for future program development. Concerns about maintaining a high quality of instruction throughout the fast pace of change in technical colleges emerged as an issue that needs to be addressed, and opens possibilities for collaboration with teacher preparation institutions in the state. It was clear in nearly all the responses that technical colleges must continuously respond to the implications of increasingly sophisticated technology developments in nearly every occupational field, particularly the integration of IT/computer technology across all program areas. Also, the increasing importance of third party certification in IT and other professional fields raises significant questions about the value of college diplomas and degrees as these are traditionally designed and offered. This is an area where additional research into innovative programming at other community/technical colleges could be of interest.

Institutions Participating in the Survey

Albany Tech

Altamaha Tech

Atlanta Tech

Coosa Tech

DeKalb Tech

Georgia Quick Start

Heart of Georgia Tech

Moultrie Tech

North Metro Tech

Northwestern Tech