
Student Evaluation of Program Report



2003 / 2004



STUDENT EVALUATION
OF PROGRAM REPORT
2003/2004

Cover and Title page image is of Red River College students at the Princess Street Campus.

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Applied Sciences Division	8	English for Nursing Purposes		APP Automotive Service Technician	
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Chemical and Biosciences Technology		English for Professional Purposes		APP Machinist	
Child and Youth Care		English for Technical Purposes		APP Motor Vehicle Body Repairer	
College Preparation for Nursing		Intensive English as a Second Language		APP Motor Vehicle Mechanic ASSET	
Dental Assisting - Level 2		Introduction to Business		APP Sheet Metal	
Diploma Nursing (Accelerated)		Senior 3		APP Transport Trailer Mechanic	
Disability and Community Services		Senior 4		APP Transport Truck/Bus Mechanic	
Early Childhood Education		Industrial Technologies Division	27	Automotive Technician - Certificate	
Health Care Aide		Advanced Network Technology		Automotive Technician - Diploma	
Health Care Aide/Unit Clerk		APP Bricklaying		Automotive Technician - Work Experience	
Joint Baccalaureate Nursing		APP Cabinet Making		Heavy Duty Equipment Mechanic	
Medical Laboratory Technology		APP Carpenter		Manufacturing Technician	
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Business Administration Co-op		APP Steamfitting		Photography - Enhanced	
Business Administration Integrated		Architectural/Engineering Technology		Power Engineering Fifth Class	
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Introduction

This report provides an overview of the findings of the Student Evaluation Program Survey (SEPS) 2003-2004. The annual SEPS is part of Red River College's commitment to understand the attitudes and feelings of students towards their college experiences. Each year students, in all programs, are surveyed towards the end of their program of study to gather information on a wide variety of aspects of the College. The data are used across the College to improve programs and services to students. Selected questions from the survey are part of internal Program Validations and are used as key College performance indicators. This report presents the results of these surveys in a form that allows for a broad overview of findings and for wide distribution. The survey questionnaire includes demographic questions and forty-four questions concerning students' experiences with College programs, facilities and services.

This report opens with a brief outline of the College aggregate results, including a summary of student ratings of key aspects of the College and the characteristics of respondents by major program type, that is, Apprenticeship, Regular Program and Continuing Education.

Primarily, the report summarizes student attitudes¹ by Division and by Program. In order to summarize the large volume of questions, the data was first reduced through factor analysis. It allows the information contained in a large number of questions to be summarized in a smaller set of factors. The main applications of factor analytic techniques are: (1) to reduce the number of variables and (2) to detect structure in the relationships between variables, that is to classify variables into categories.

The analysis indicated that the forty-four questions on the SEPS can be captured in eight dimensions:

- Program Quality
- Quality of Orientation
- Quality of familiarization to College Policies
- Quality of welcoming, inclusive College Environment
- Quality of Instruction
- Quality of Program Resources
- Quality of College Facilities
- Quality of College Services

Students' assessments of the College are presented along these dimensions in a four point scale from one to four with one indicating strong dissatisfaction and four, strong satisfaction throughout the report.

The College encourages comments about this Report. Questions concerning the methodology of this study should be directed to Jim Goho, Director of Research and Planning at 204.632.2091 or jgoho@rrc.mb.ca.

A handwritten signature in black ink, appearing to read 'Jim Goho', written over a set of horizontal lines.

Jim Goho
Director, Research and Planning

¹ It does not include results for the specific questions regarding clinical placements, cooperative education or work placements/practicums. These will be considered for future inclusion.

Report Highlights

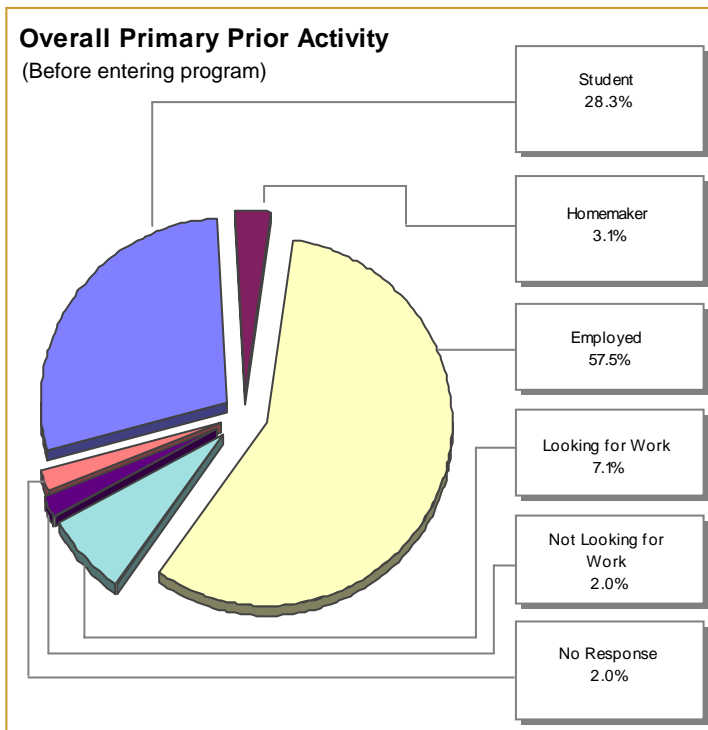
Red River College's Student Evaluation of Program survey of 2003/2004 students shows that students express overall high levels of satisfaction with their education.

The main prior activity of students was being employed (57.5%) followed by being a student [either high school, college or university] (28.3%) and looking for work (7.1%).

There were 2561 respondents to the survey. That is an increase of 25.4 percent over the 2042 surveys returned in 2002/2003.

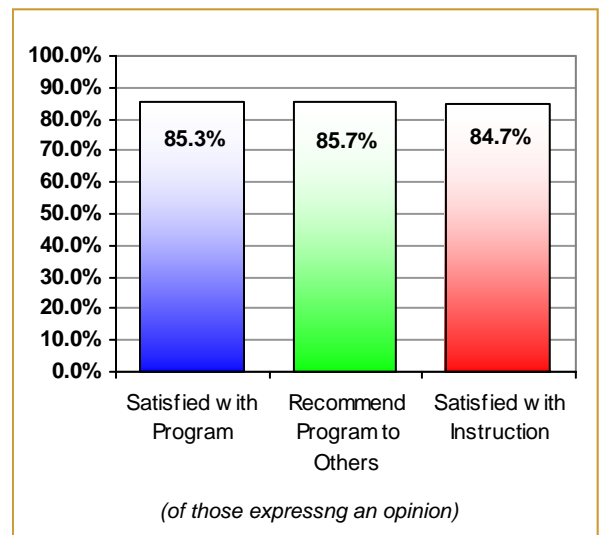
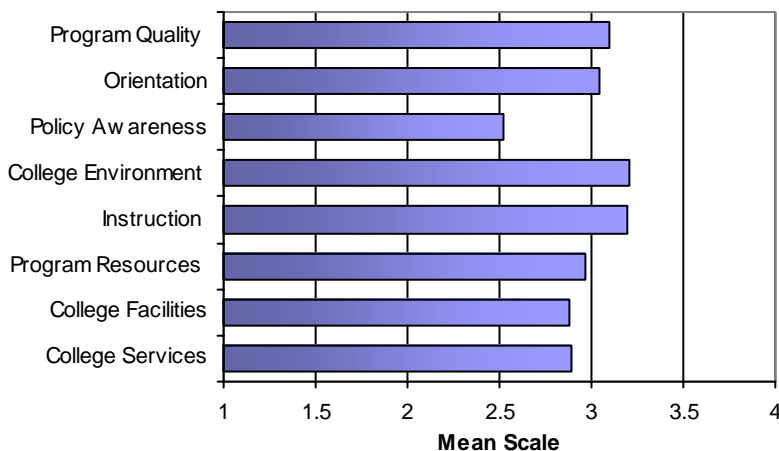
Of all students who responded to the survey, 85 percent were satisfied with their education, 85 percent were satisfied with instruction and 86 percent would recommend their program to others.

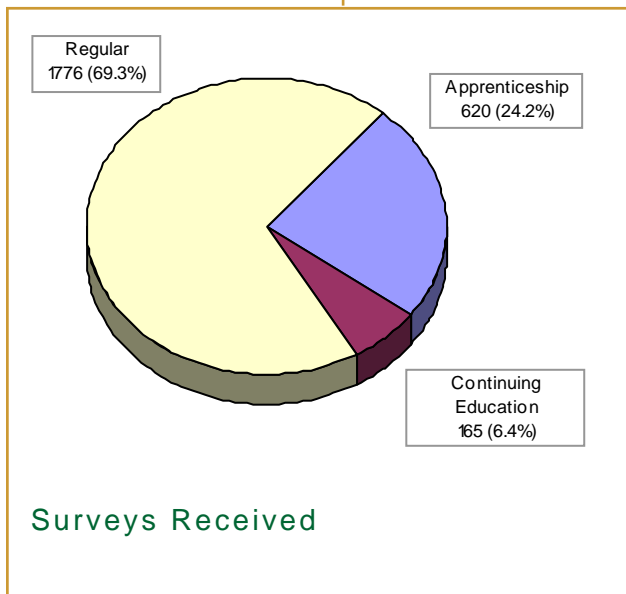
Students gave overall ratings higher than 3.0 to College Environment (3.21), Instruction (3.19), Program Quality (3.10), and Orientation (3.04). Program Resources at (2.97), College Facilities (2.88), and College Services (2.89) were rated near to 3.0, while Policy Awareness (2.53) was just above the mid-point.



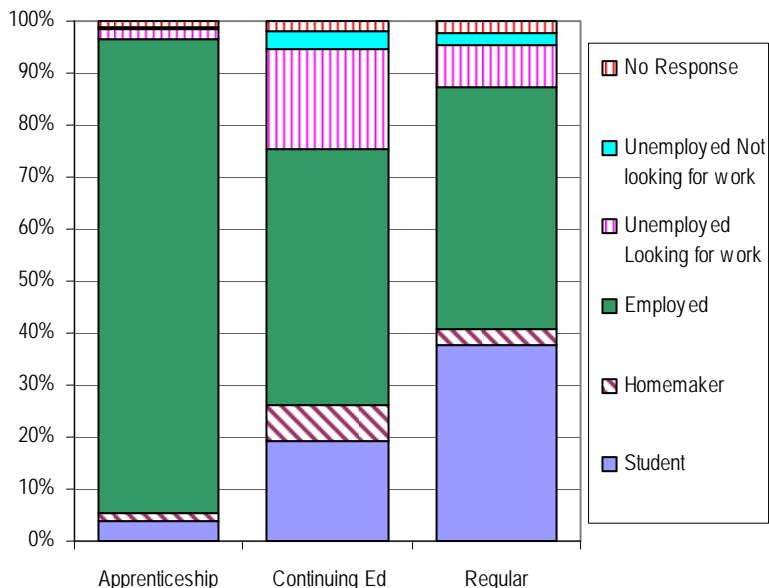
Achievement	# Programs Surveyed	Surveys Received
Advanced Diploma	4	38
Apprenticeship	22	620
Certificate	39	976
Diploma	41	874
External	1	37
No Award	2	16
Total	109	2561

Summary of Student Ratings of the College





Primary Prior Activity by Program Type



Prior activity of students varied by program type. By far, most Apprenticeship students were working. Most Continuing Education students were in the workforce, either employed or unemployed. More Regular program students were previously in school than students in the other program types.

Survey Process

Red River College surveys its students about their program on an annual basis. Students are asked to indicate their level of satisfaction with the education received.

The analyzed data from the completed and returned surveys are presented in this report for each program. Data are also presented for each Academic Division.

Scope of the Survey

Students from certificate, diploma and advanced diploma programs, as well as from apprenticeship, no

award and programs delivered in partnership with external agencies are surveyed during the last term of the program. Students of contract programs are surveyed. A total of 2561 students participated in the survey.

Methodology

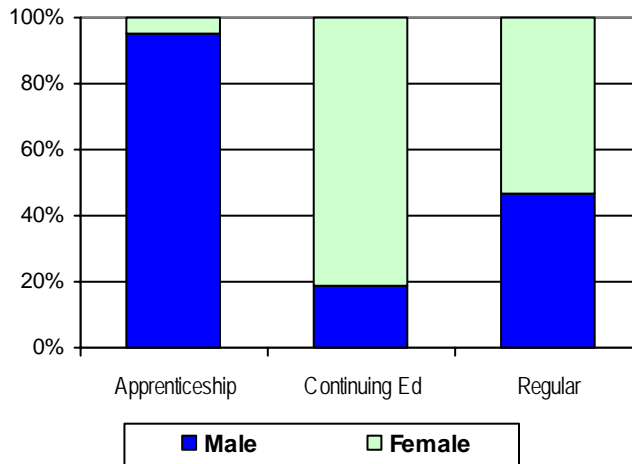
The survey is conducted annually during the last term of each program. To ensure anonymity class time is allocated without the instructor being present. A student volunteer collects survey materials from each student and seals them in a return envelope.

Response Rates

All program students who were in class were surveyed and a proportion of this population responded. The results in this report are based on those respondents. The survey methodology and fielding process does not allow for the calculation of response rates, although, anecdotally, most students in class respond. The number of students responding to the survey is identified in this report for each program.

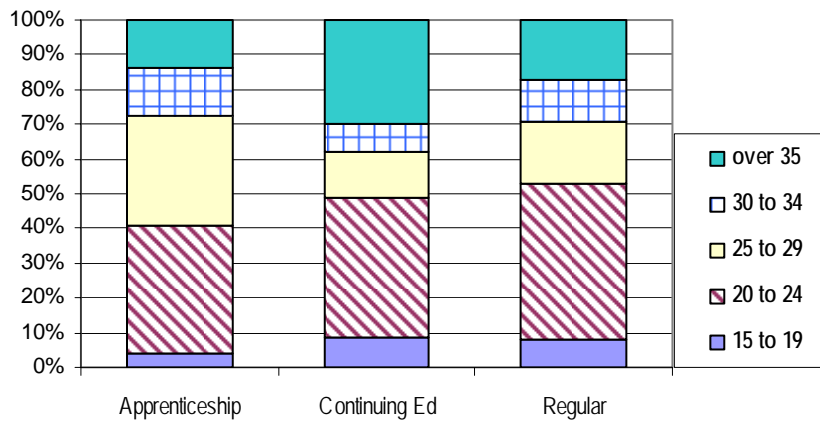
Gender of Respondents

There was a significant difference in gender by program type. Apprenticeship students were by far male, Continuing Education students were primarily female and Regular students were more evenly distributed with 53.2% female.



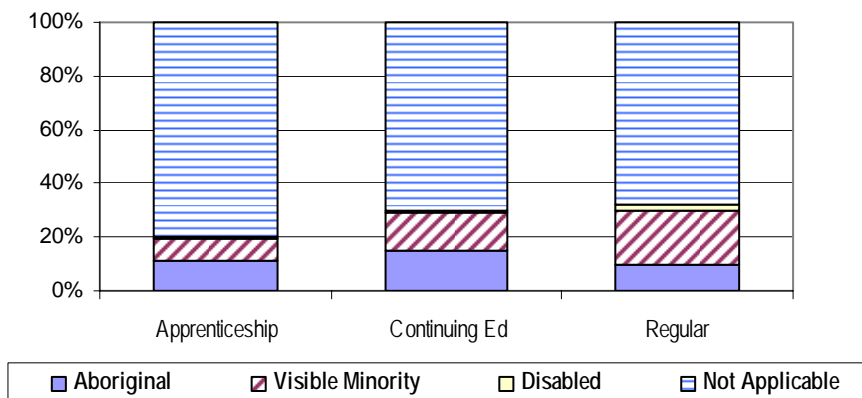
Age of Respondents

There was a variation in the age structure by program type. Almost sixty percent of Apprenticeship students were 25 and over. Continuing Education students had the highest percent in the over 35 age group. Regular students tended to be younger.



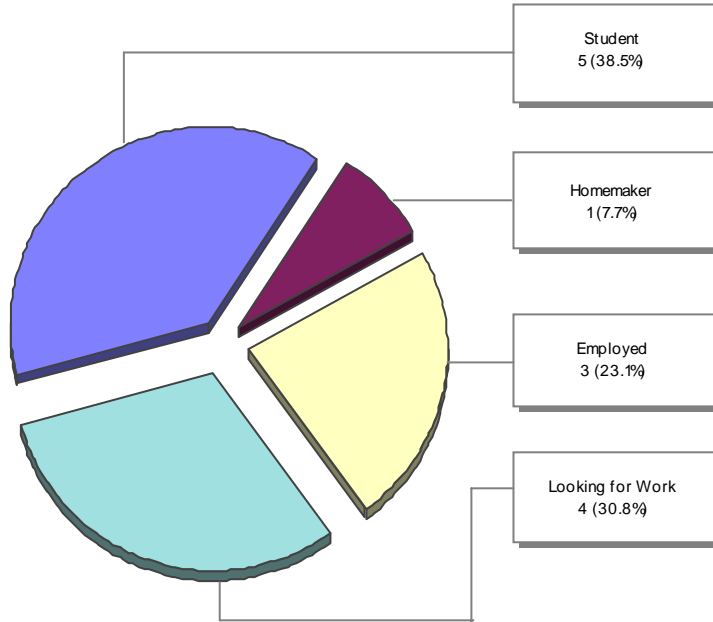
Designation of Respondents

The proportion of Aboriginal people, visible minorities and disabled people varied by program type, with Apprenticeship programs having a smaller proportion than Continuing Education or Regular programs.



Aboriginal Education Division

Primary Prior Activity (Before entering program)



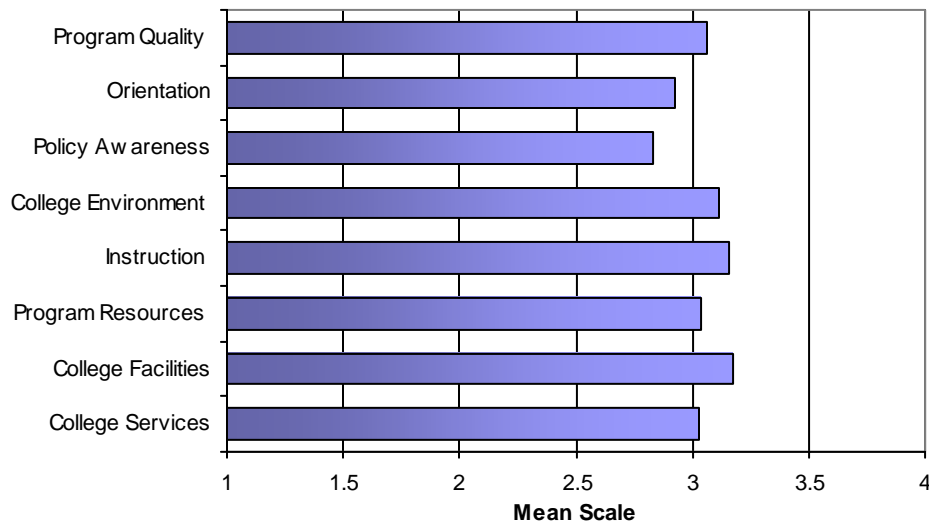
Number of Respondents in this Division: 13

Programs in this report:

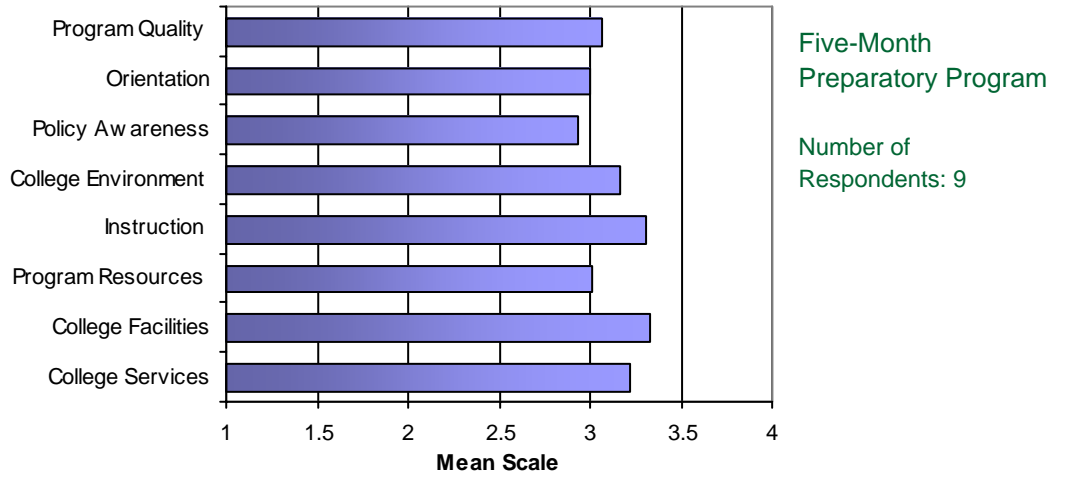
ACCESS Integrated Pre-Trades Program

Programs with less than 5 respondents are not illustrated in this report but are included in the Divisional statistics.

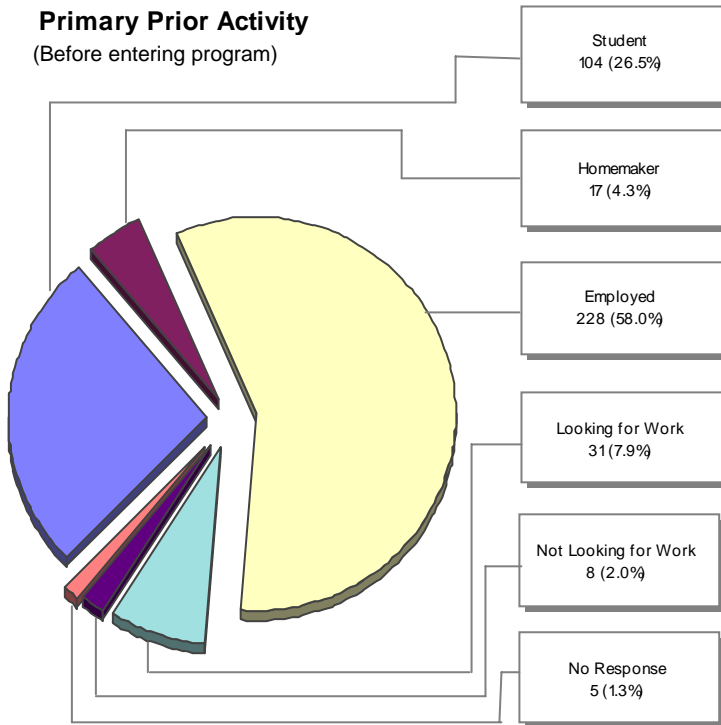
Summary of Student Divisional Ratings



ACCESS Integrated Pre-Trades Program



Applied Sciences Division

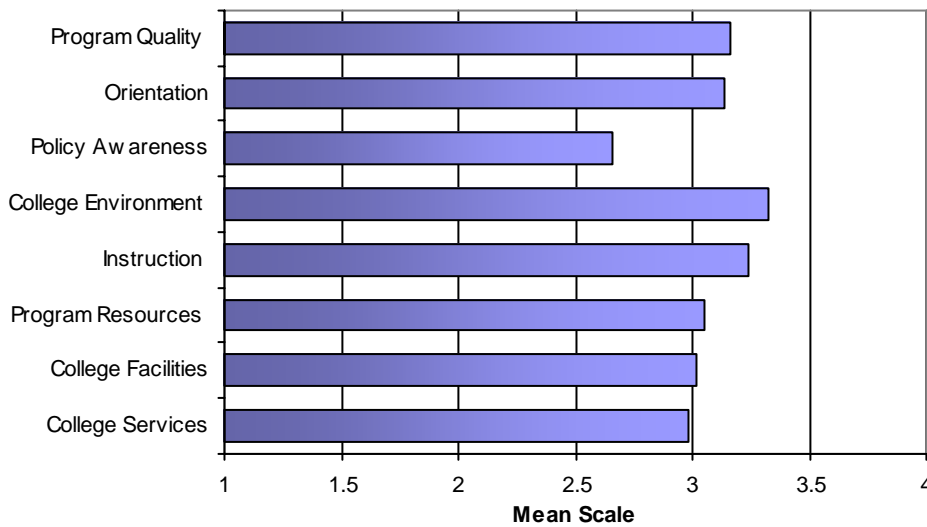


Number of Respondents in this Division: 393

Programs in this report:

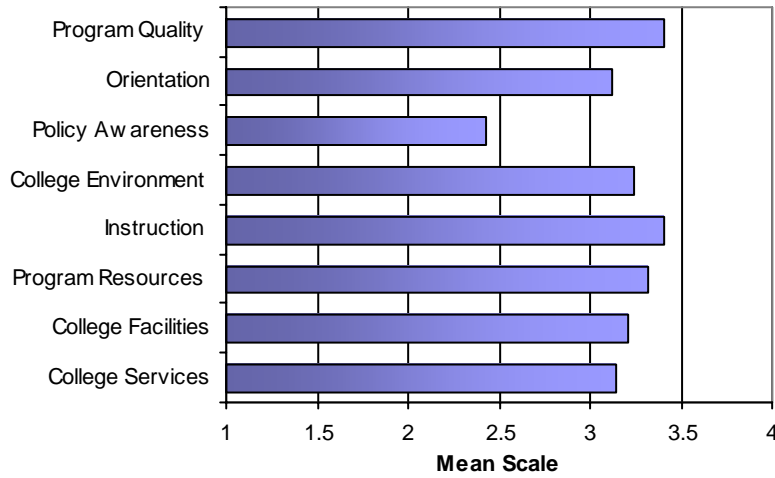
- Animal Health Technology
- Chemical and Biosciences Technology
- Child and Youth Care Worker
- College Preparation for Nursing
- Dental Assisting - Level 2
- Diploma Nursing (Accelerated)
- Disability and Community Support
- Early Childhood Education
- Health Care Aide
- Health Care Aide/Unit Clerk
- Joint Baccalaureate Nursing
- Medical Laboratory Sciences
- Medical Radiologic Technology
- Radiation Therapy
- RN Refresher for Korean Nurses

Summary of Student Divisional Ratings



Programs with less than 5 respondents are not illustrated in this report but are included in the Divisional statistics.

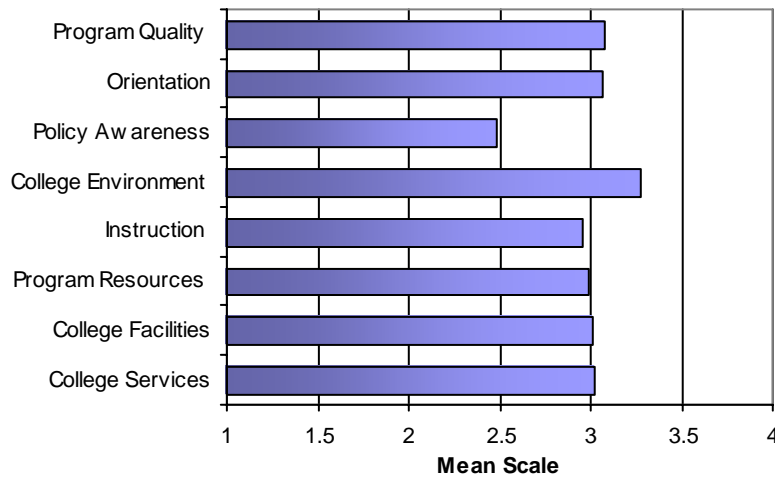
Animal Health Technology



Two-Year Diploma Program

Number of Respondents: 17

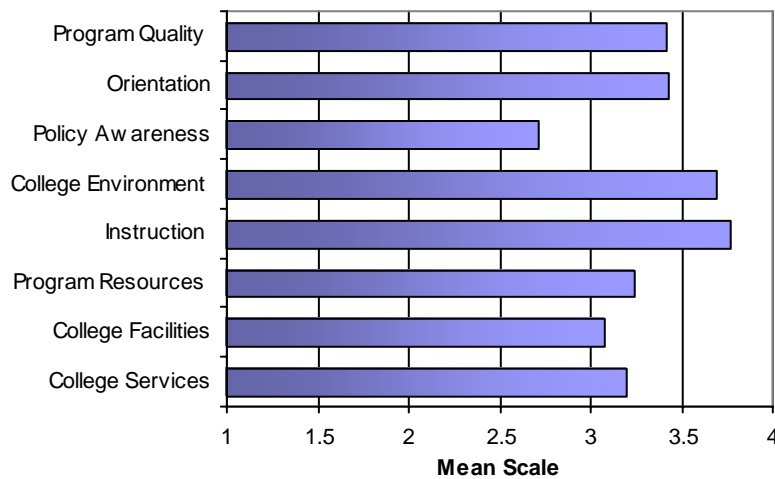
Chemical and Biosciences Technology



Two-Year Diploma Program

Number of Respondents: 25

Child and Youth Care Worker



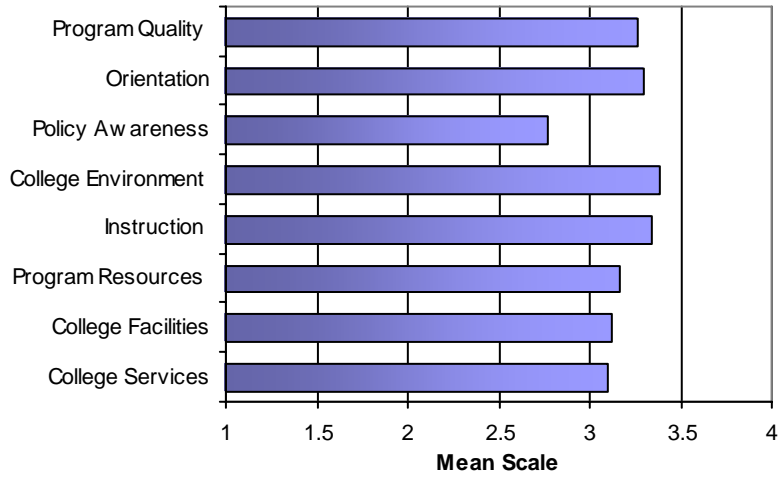
Two-Year Diploma Program

Number of Respondents: 14

College Preparation for Nursing

One-Year Certificate Program

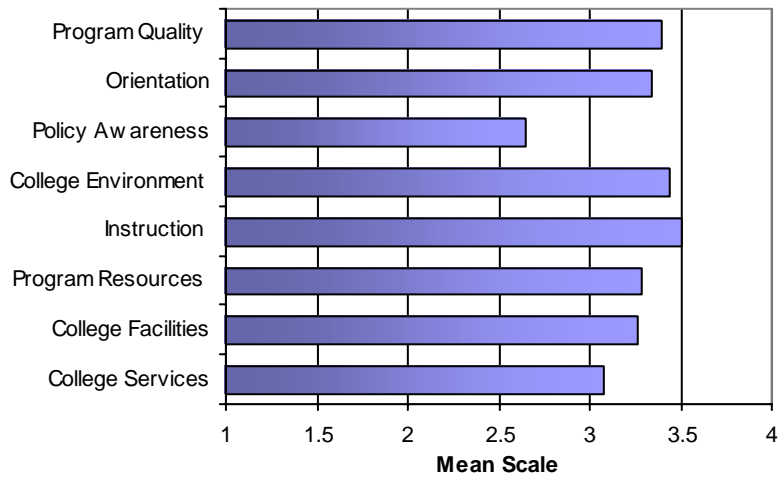
Number of Respondents: 22



Dental Assisting - Level 2

One-Year Certificate Program

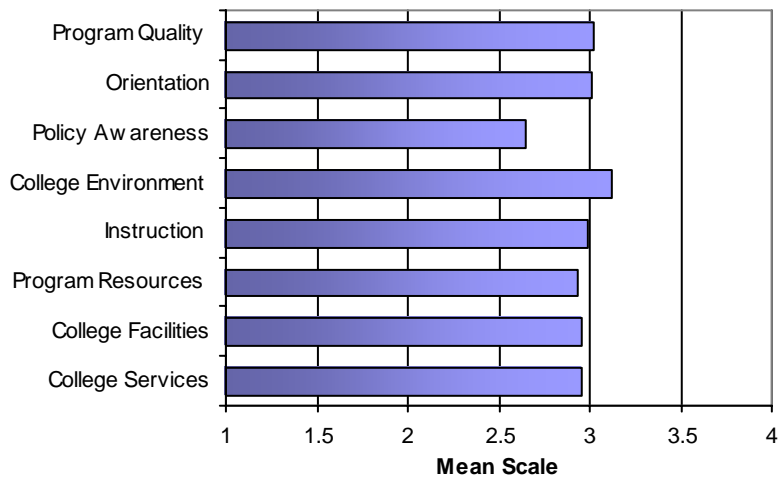
Number of Respondents: 41



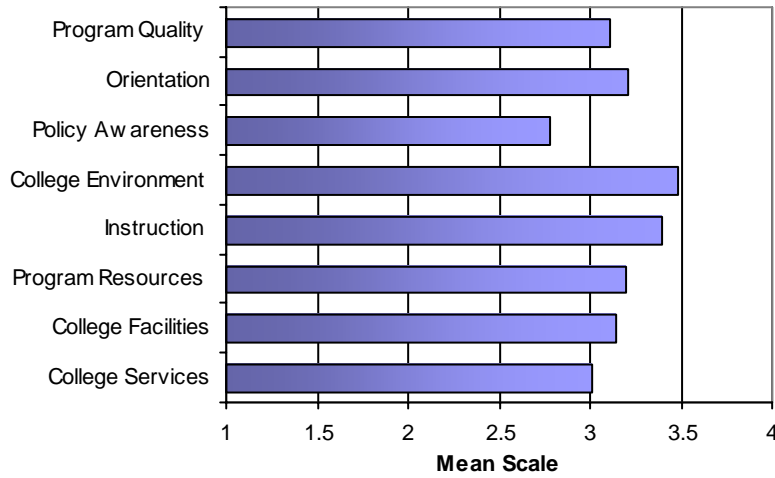
Diploma Nursing (Accelerated)

Two-Year Diploma Program

Number of Respondents: 62



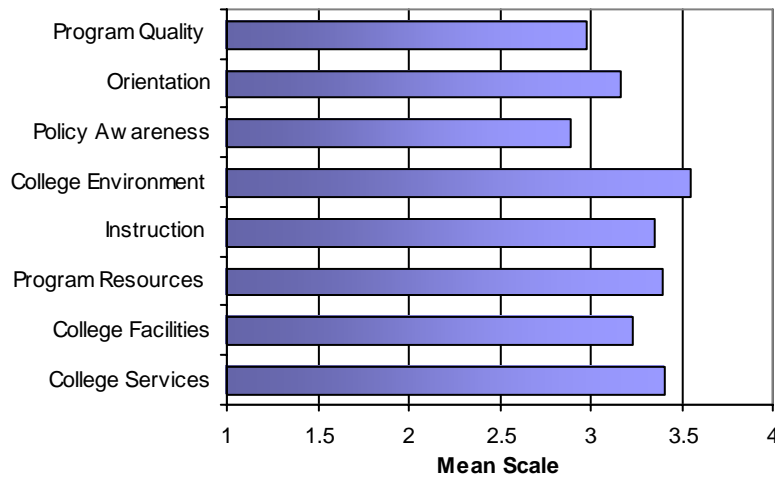
Disability and Community Support



Two-Year Diploma Program

Number of Respondents: 12

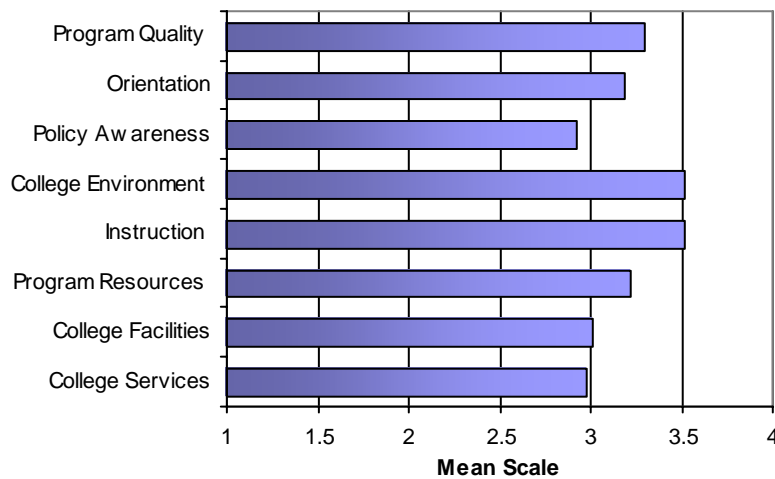
Early Childhood Education



Two-Year Diploma Program

Number of Respondents: 12

Health Care Aide



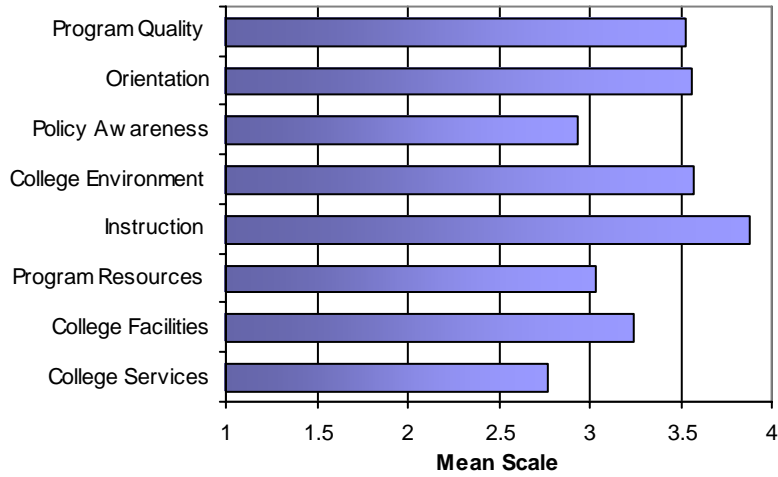
Twenty-Week Certificate Program

Number of Respondents: 68

Nine-Month
Certificate Program

Number of
Respondents: 18

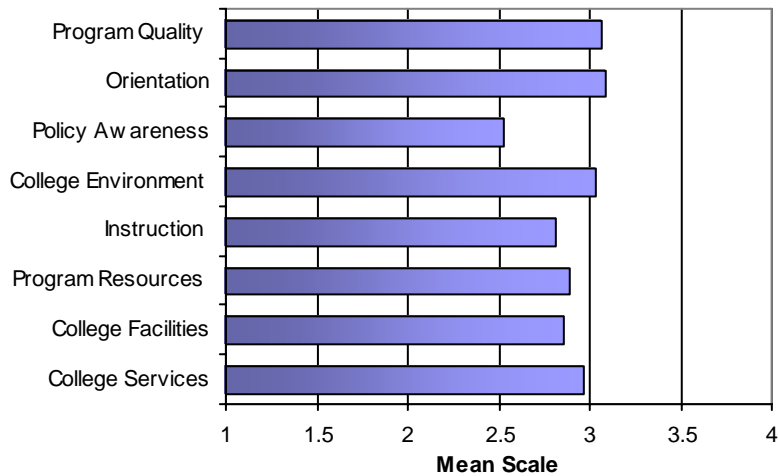
Health Care Aide/Unit Clerk



Four-Year Joint
Program

Number of
Respondents: 37

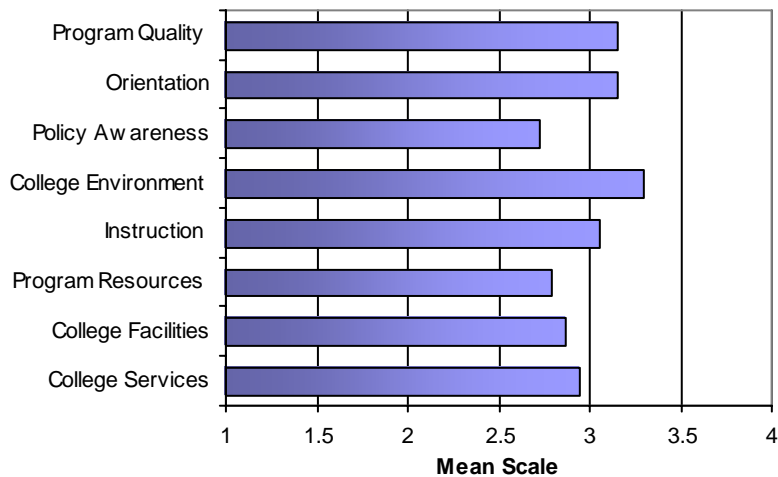
Joint Baccalaureate Nursing



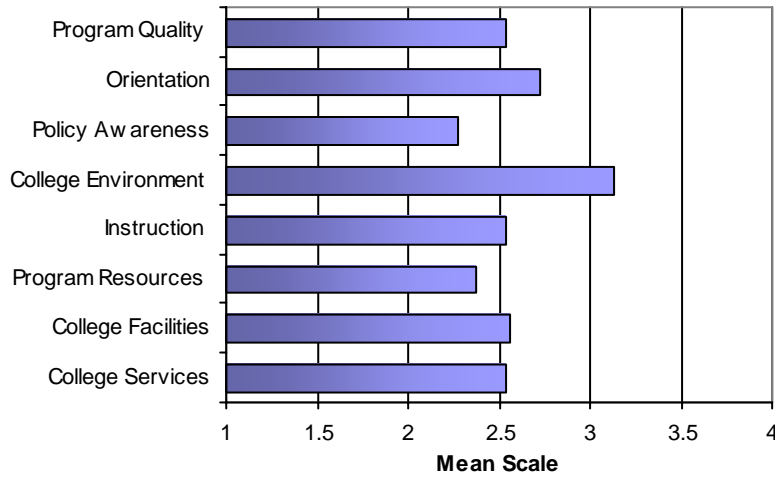
Two-Year Diploma
Program

Number of
Respondents: 13

Medical Laboratory Sciences



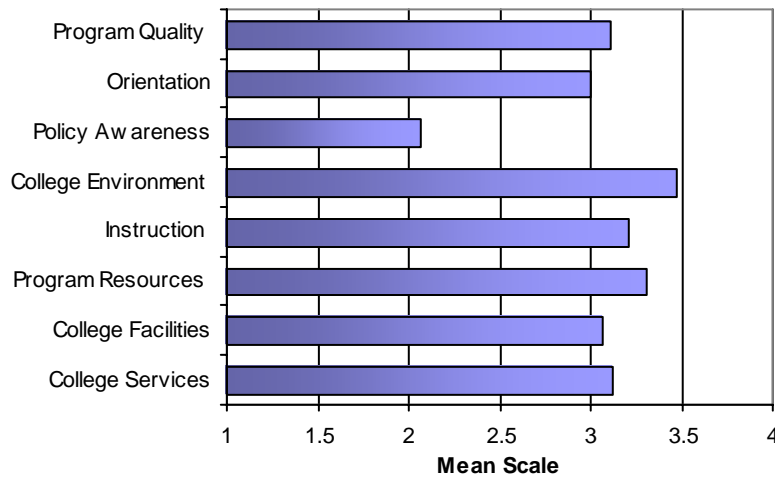
Medical Radiologic Technology



Two-Year Diploma Program

Number of Respondents: 22

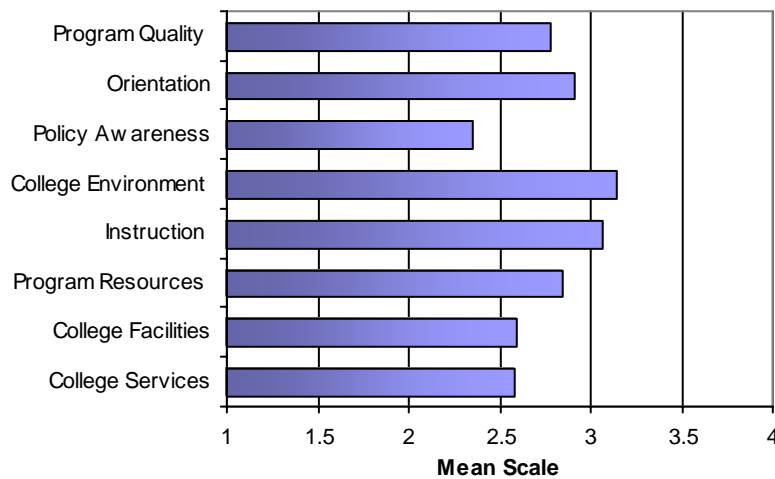
Radiation Therapy



28-Month Diploma Program

Number of Respondents: 6

RN Refresher for Korean Nurses

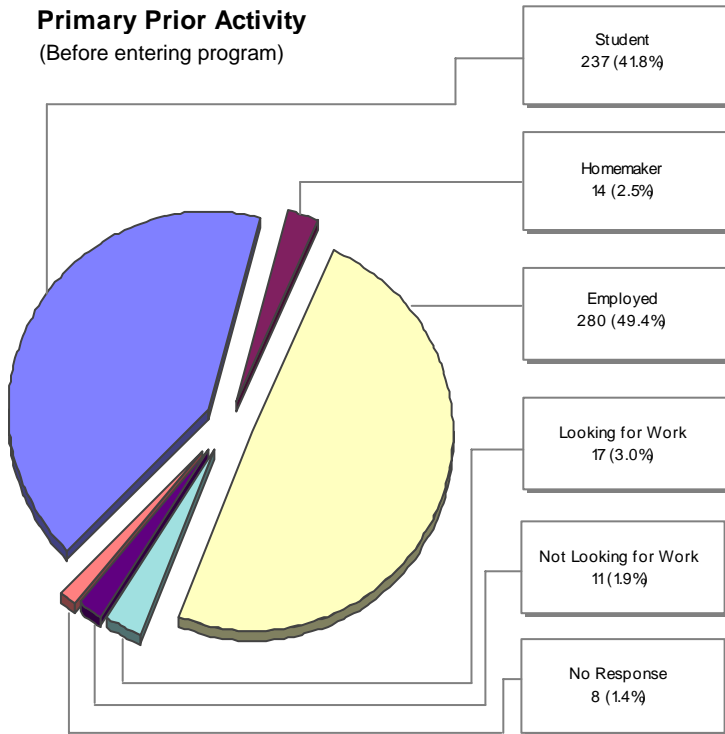


Five-Month Refresher Program

Number of Respondents: 12

Business & Applied Arts Division

Primary Prior Activity
(Before entering program)

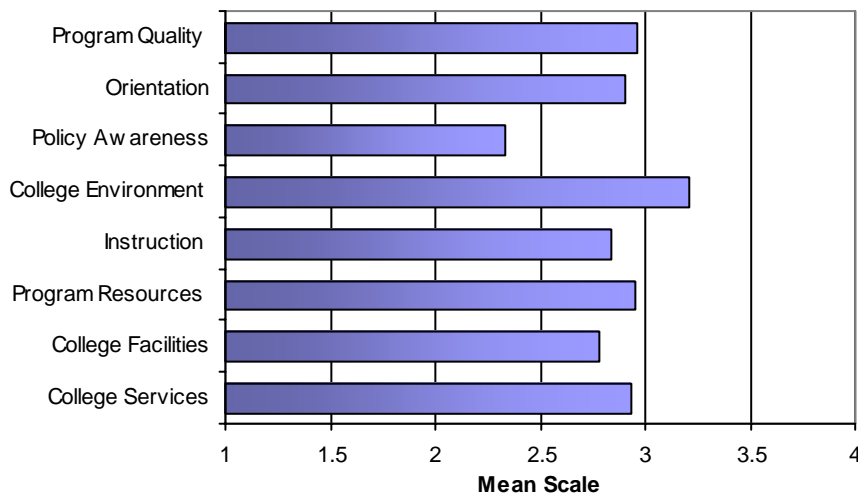


Number of Respondents in this Division: 567

Programs in this report:

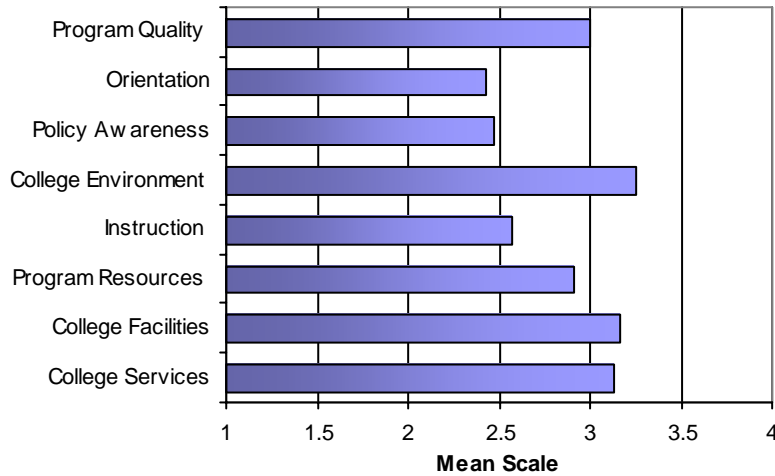
- APP Cook
- Aviation Management
- Business Administration
- Business Administration Co-op
- Business Administration Integrated
- Commerce/Industry Sales & Marketing
- Computer Accounting Technician (Laptop)
- Computer Analyst/Programmer
- Creative Communications
- Culinary Arts
- Digital MultiMedia Technology
- Graphic Design
- Graphic Design - Advanced
- Health Information Technologist
- Hotel & Restaurant Administration
- Information Systems Technology - E-commerce
- Information Systems Technology - Networking
- Information Systems Technology - Programming
- Professional Baking
- Tourism

Summary of Student Divisional Ratings



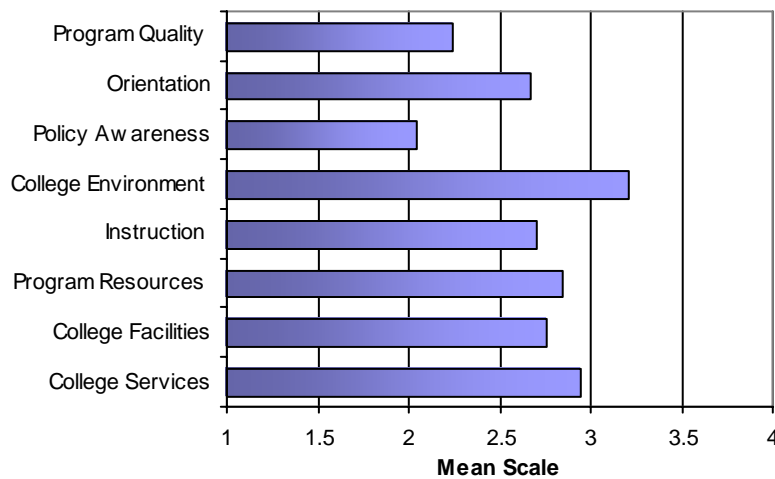
Programs with less than 5 respondents are not illustrated in this report but are included in the Divisional statistics.

APP Cook



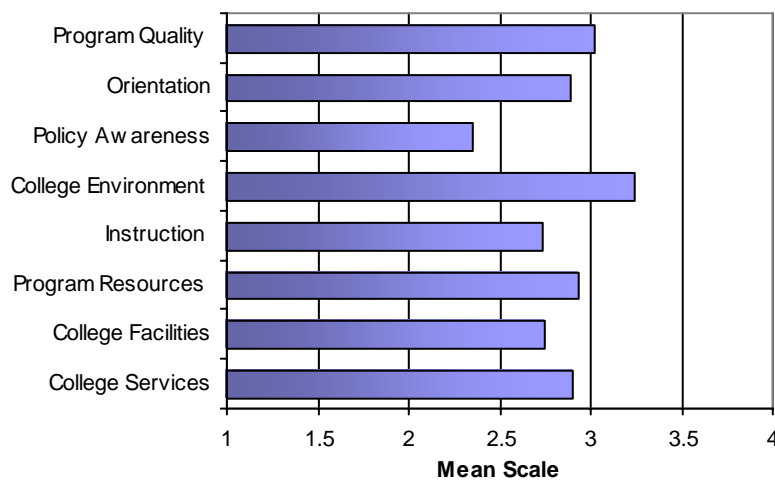
Apprenticeship Program
Number of Respondents: 15

Aviation Management



Two-Year Diploma Program
Number of Respondents: 15

Business Administration

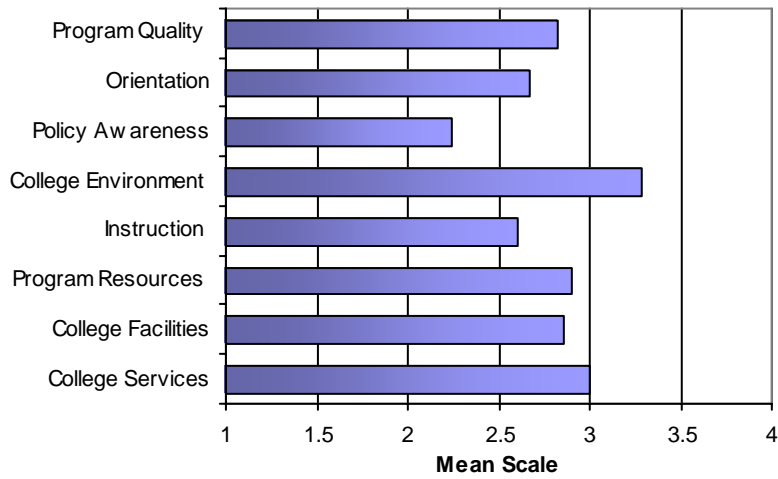


Two-Year Diploma Program
Number of Respondents: 145

Business Administration Co-op

Two-Year Diploma Program

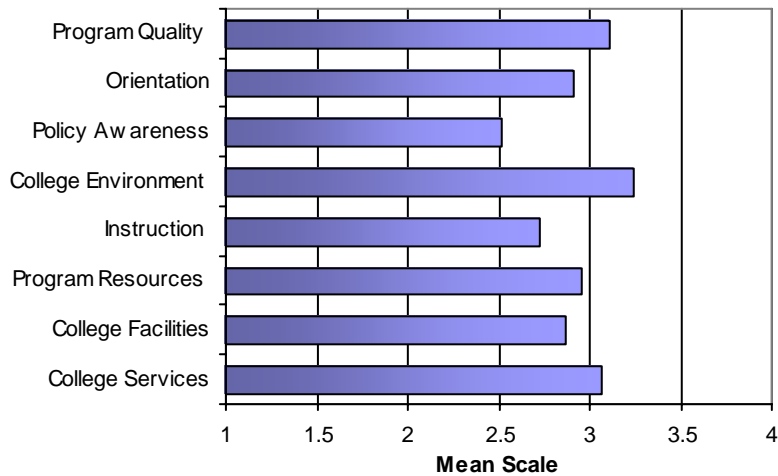
Number of Respondents: 28



Business Administration Integrated

Three-Year Diploma Program

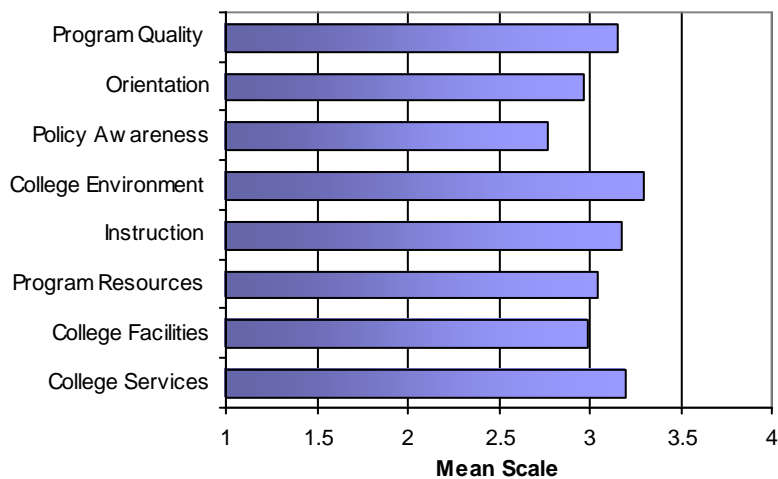
Number of Respondents: 46



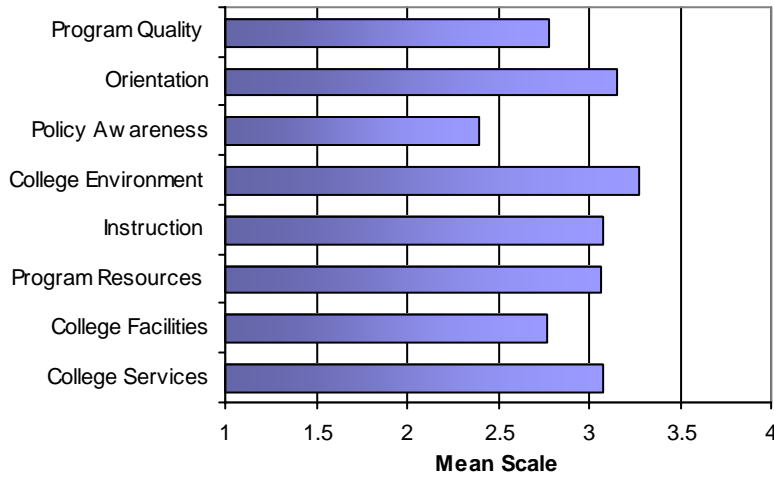
Commerce/Industry Sales & Marketing

Two-Year Diploma Program

Number of Respondents: 17



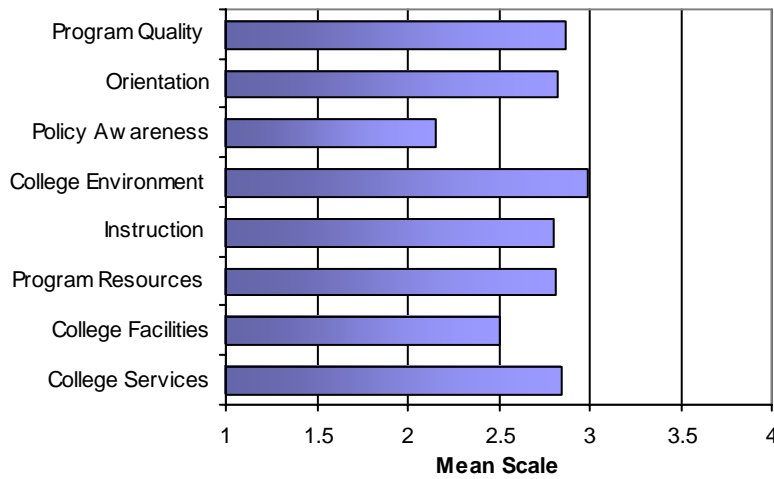
Computer Accounting Technician (Laptop)



Ten-Month Certificate Program

Number of Respondents: 18

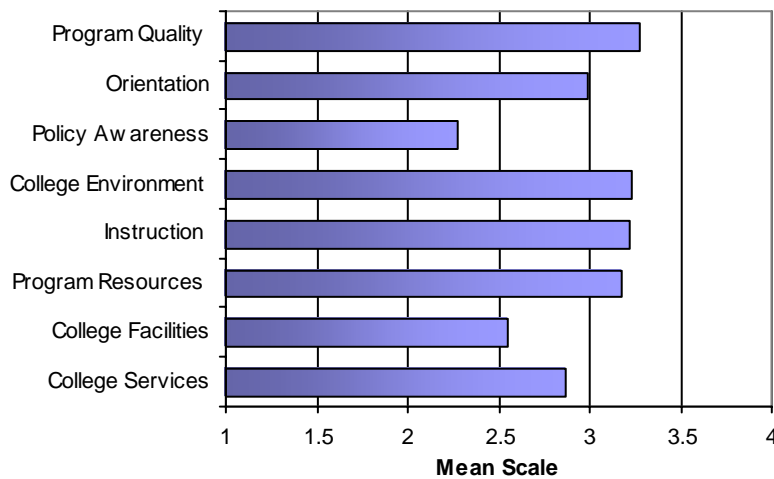
Computer Analyst/Programmer



Two-Year Diploma Program

Number of Respondents: 68

Creative Communications



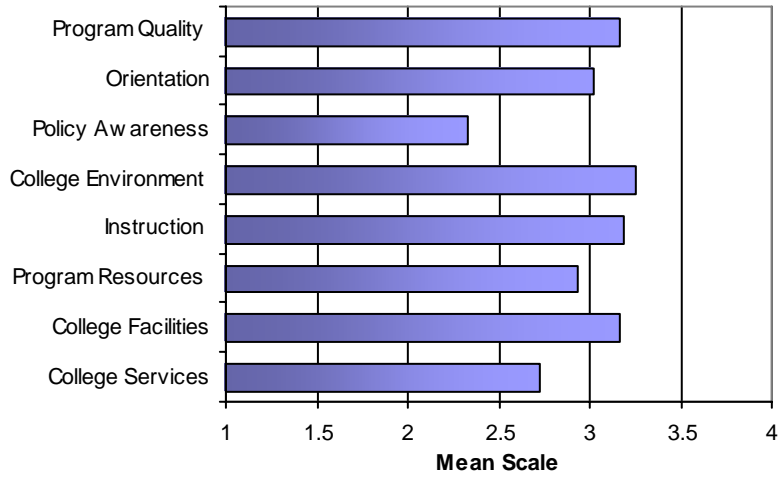
Two-Year Diploma Program

Number of Respondents: 44

Culinary Arts

Two-Year Diploma Program

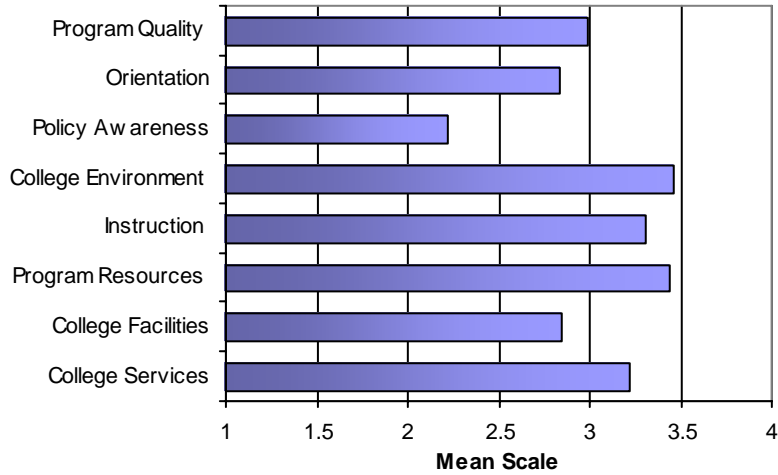
Number of Respondents: 20



Digital MultiMedia Technology

Two-Year Diploma Program

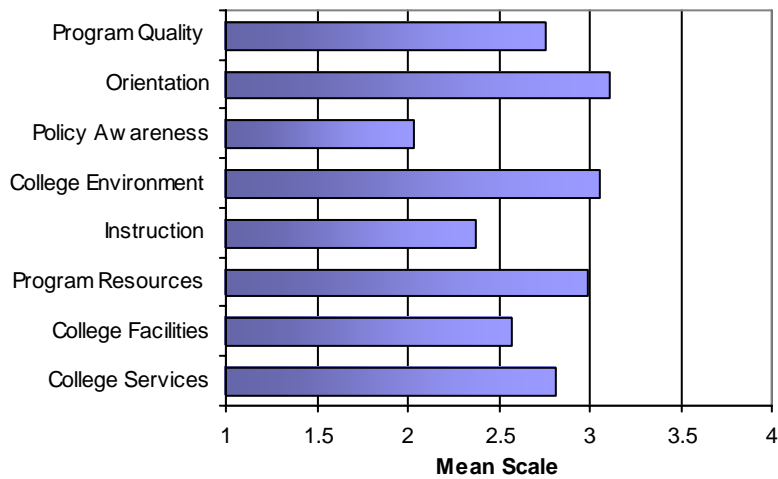
Number of Respondents: 12



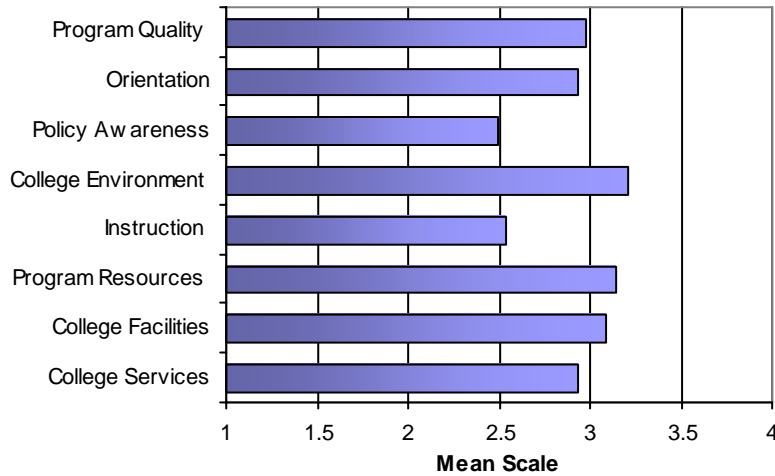
Graphic Design

Two-Year Diploma Program

Number of Respondents: 31



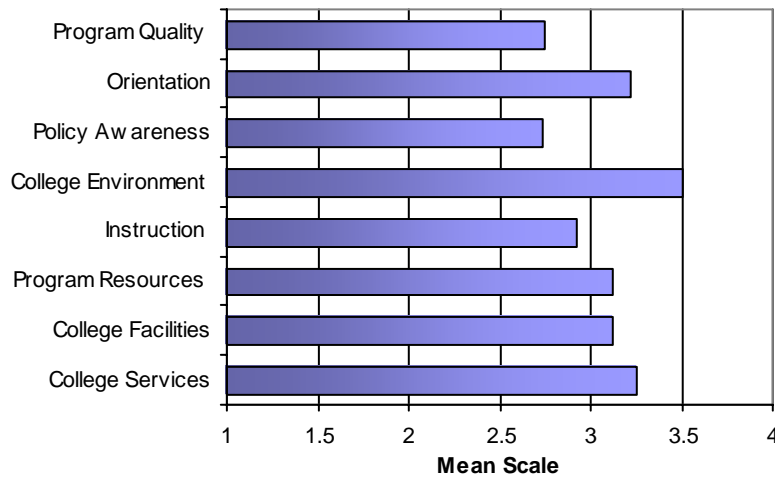
Graphic Design - Advanced



One-Year Advanced Diploma Program

Number of Respondents: 15

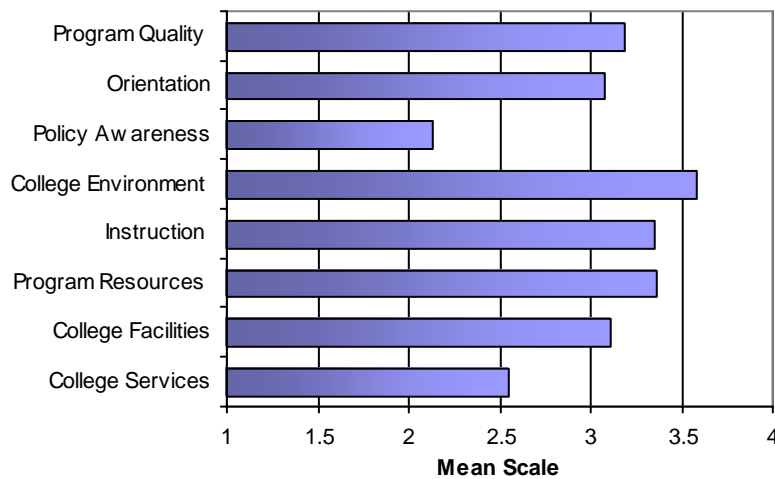
Health Information Technologist



Two-Year Diploma Program

Number of Respondents: 16

Hotel & Restaurant Administration



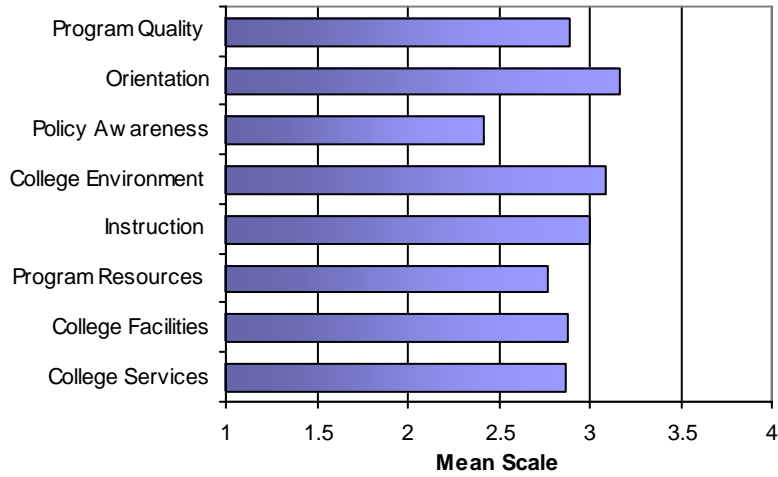
Two-Year Diploma Program

Number of Respondents: 13

Information Systems Technology - E-commerce

Two-Year Diploma Program

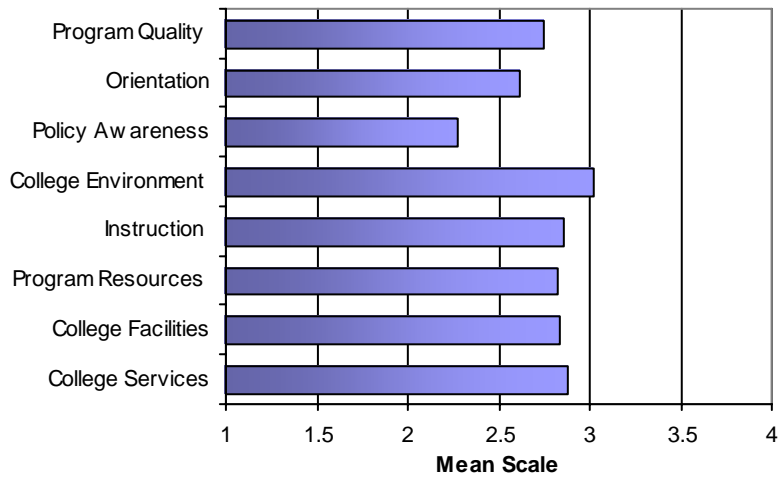
Number of Respondents: 15



Information Systems Technology - Networking

Two-Year Diploma Program

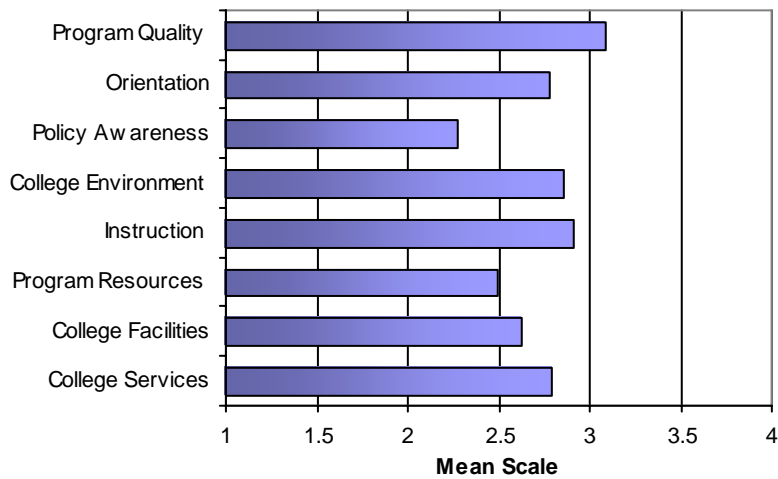
Number of Respondents: 14



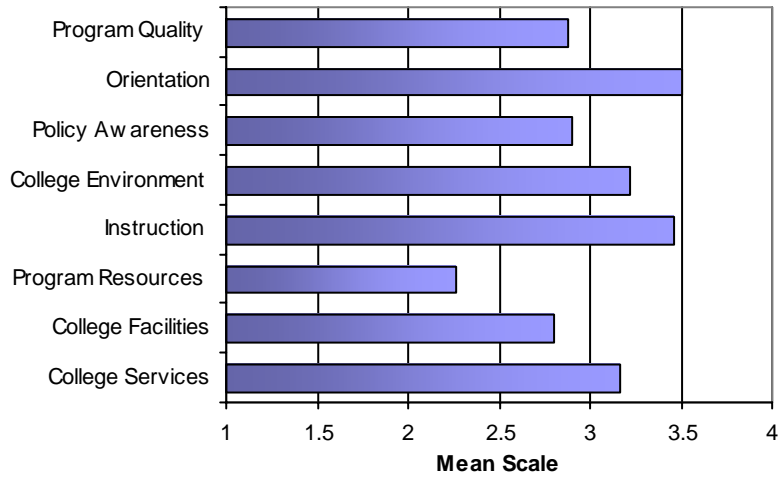
Information Systems Technology - Programming

Two-Year Diploma Program

Number of Respondents: 14



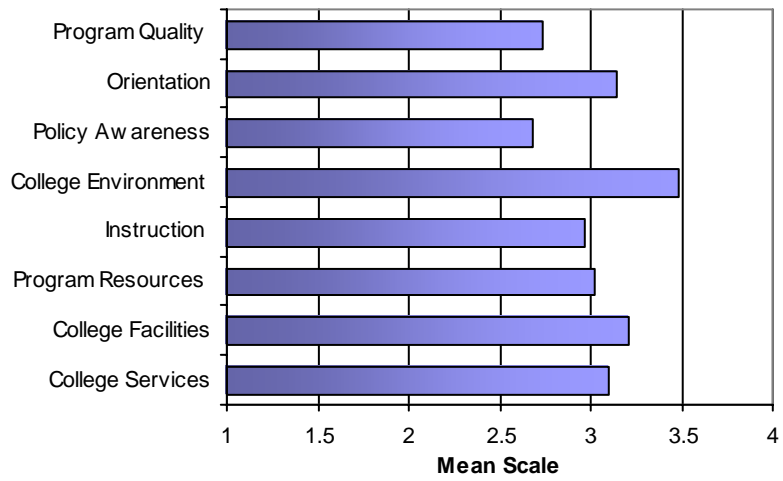
Professional Baking



One-Year Certificate Program

Number of Respondents: 6

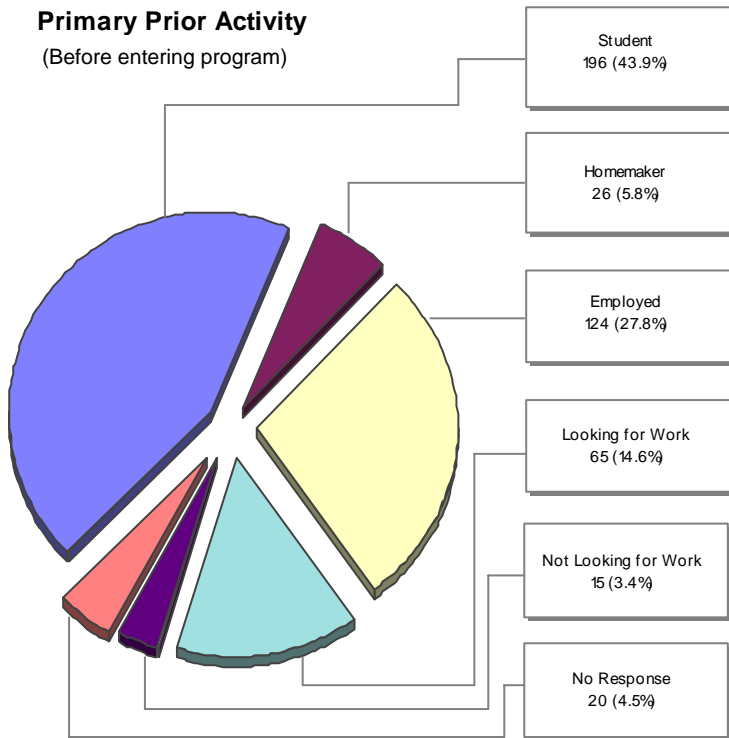
Tourism



Two-Year Diploma Program

Number of Respondents: 7

Developmental Education Division



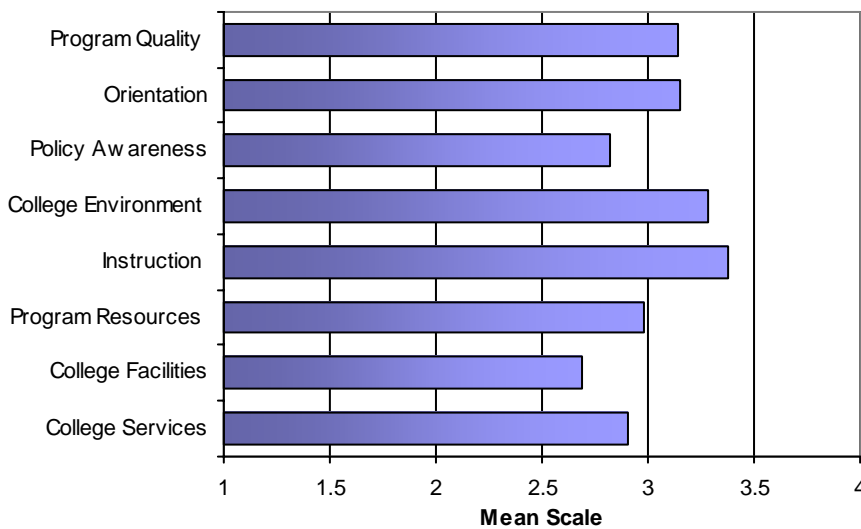
Number of Respondents in this Division: 446

Programs in this report:

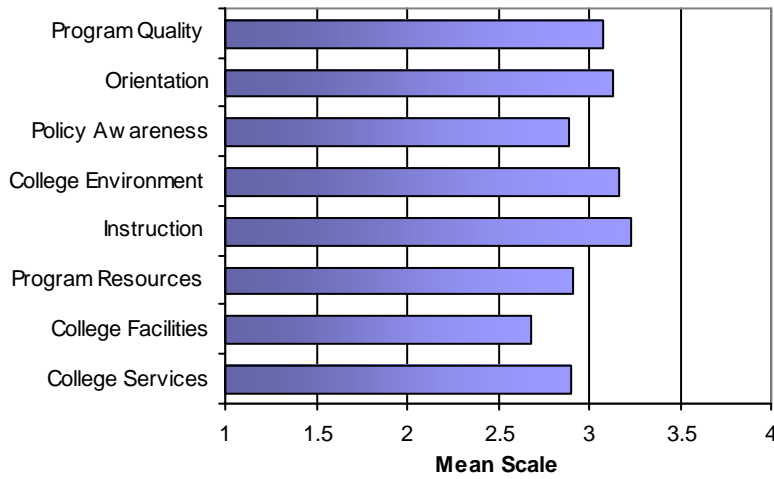
- Academic English for Univ/College Entrance
- Academic Foundations
- English for Business Purposes
- English for Health Care Aides
- English for Nursing Purposes
- English for Nursing Refresher
- English for Professional Purposes
- English for Technical Purposes
- Intensive English as a Second Language
- Introduction to Business
- Senior 3
- Senior 4

Programs with less than 5 respondents are not illustrated in this report but are included in the Divisional statistics.

Summary of Student Divisional Ratings



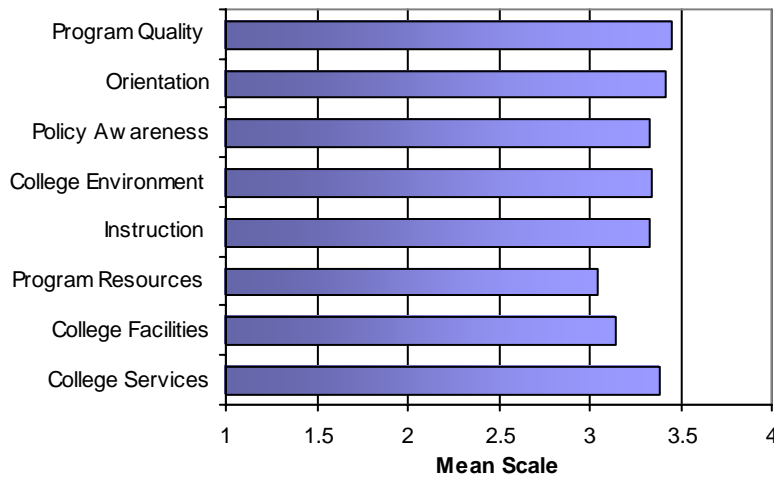
Academic English for Univ/College Entrance



Certificate Program

Number of Respondents: 109

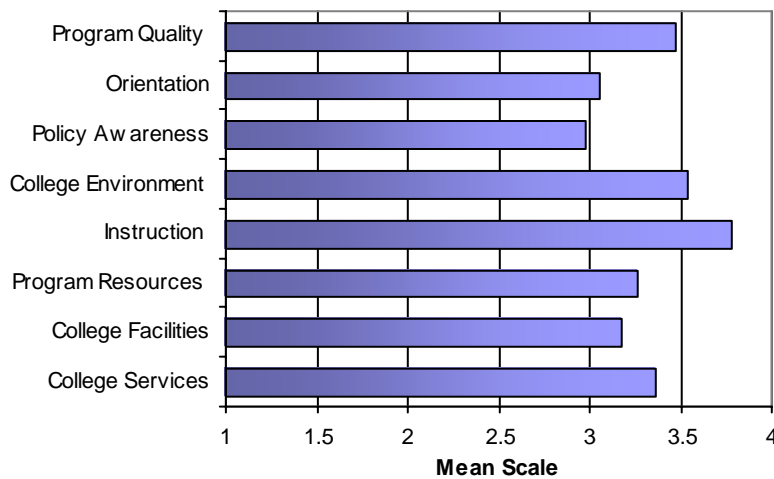
Academic Foundations



Certificate Program

Number of Respondents: 8

English for Business Purposes



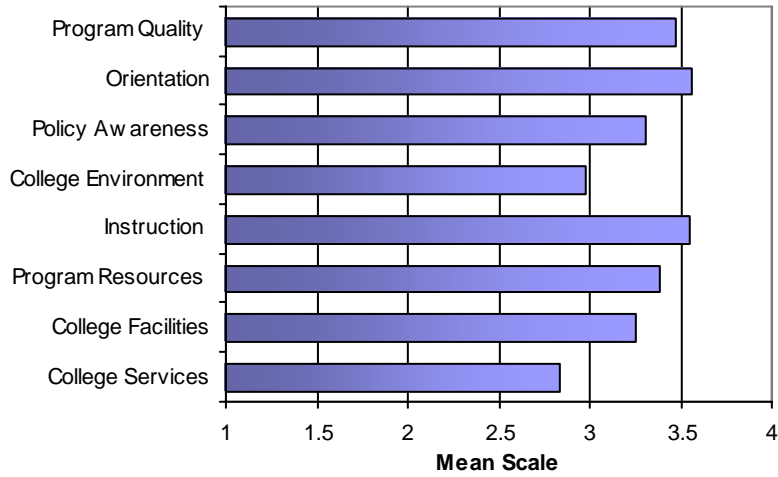
Certificate Program

Number of Respondents: 9

English for Health Care Aides

Certificate Program

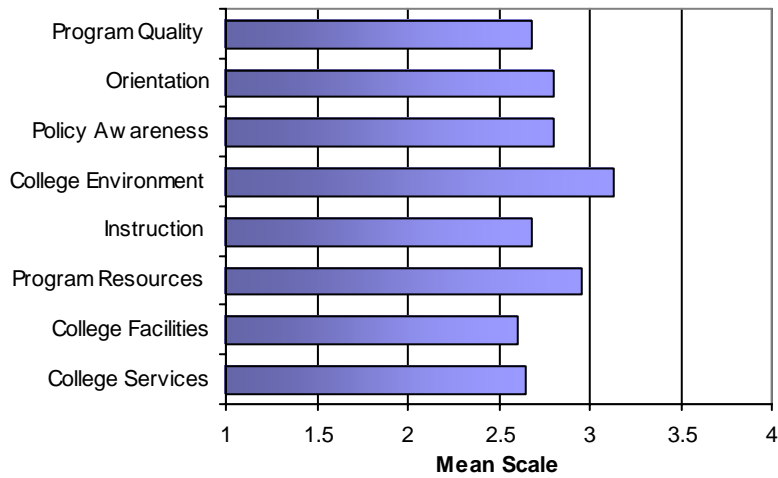
Number of Respondents: 16



English for Nursing Purposes

Certificate Program

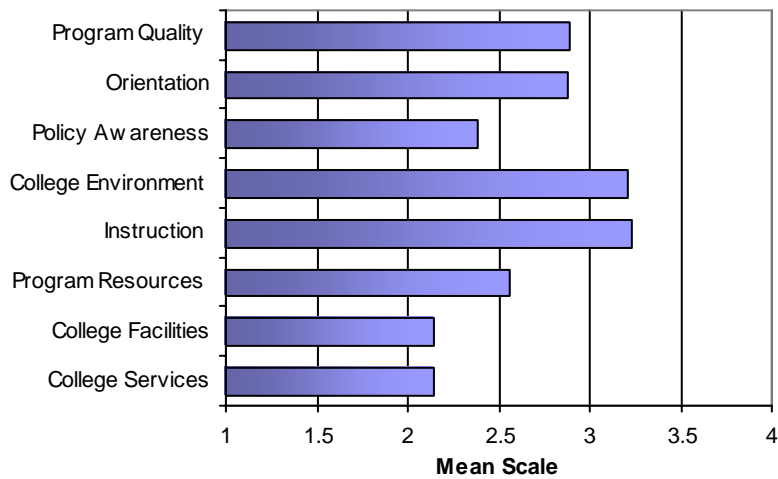
Number of Respondents: 15



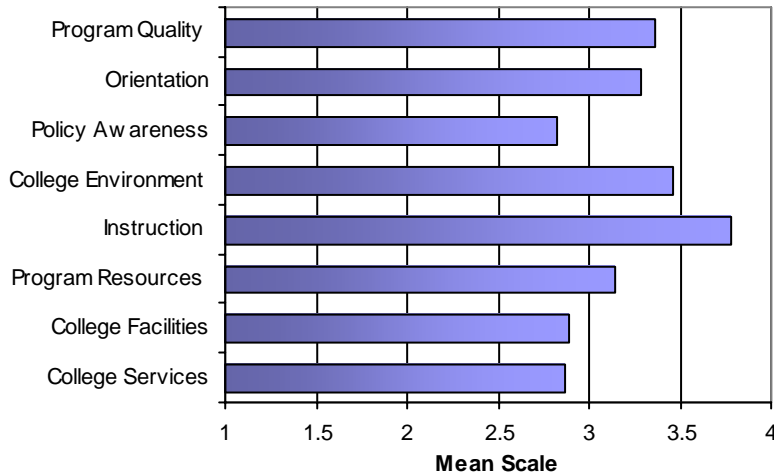
English for Nursing Refresher

Certificate Program

Number of Respondents: 28



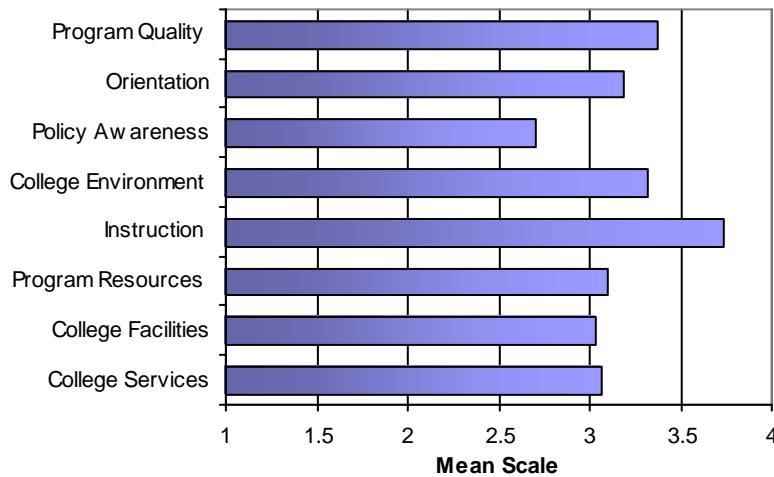
English for Professional Purposes



Certificate Program

Number of Respondents: 28

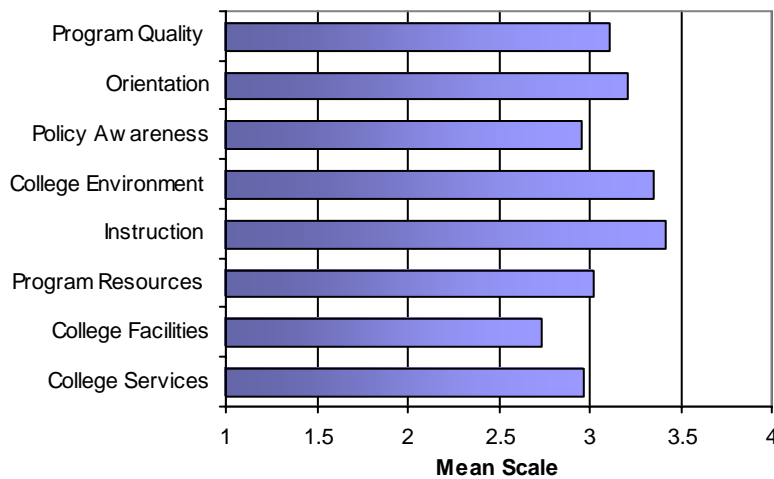
English for Technical Purposes



Certificate Program

Number of Respondents: 24

Intensive English as a Second Language



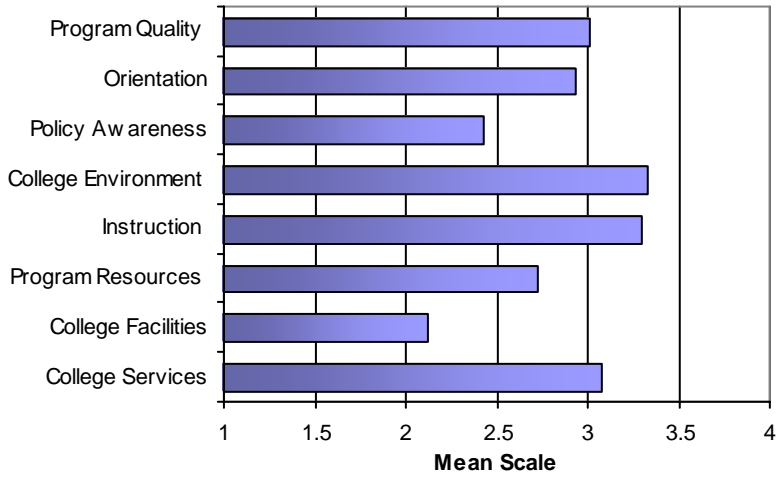
Certificate Program

Number of Respondents: 155

Introduction to Business

Certificate Program

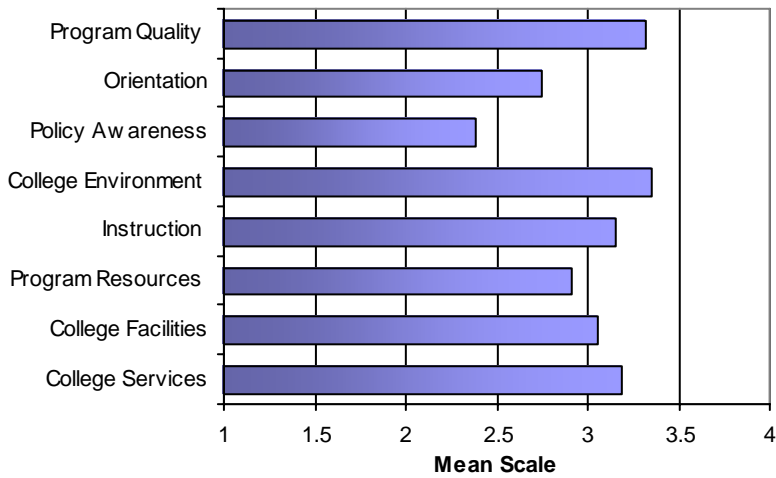
Number of Respondents: 21



Senior 3

Certificate Program

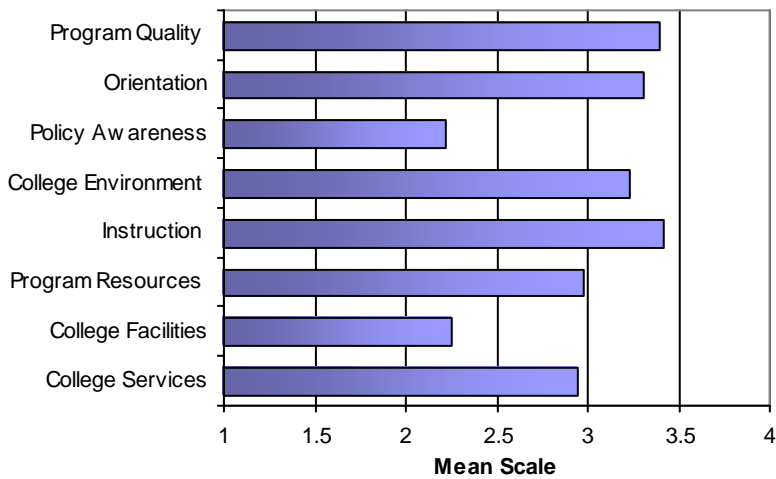
Number of Respondents: 8



Senior 4

Certificate Program

Number of Respondents: 25



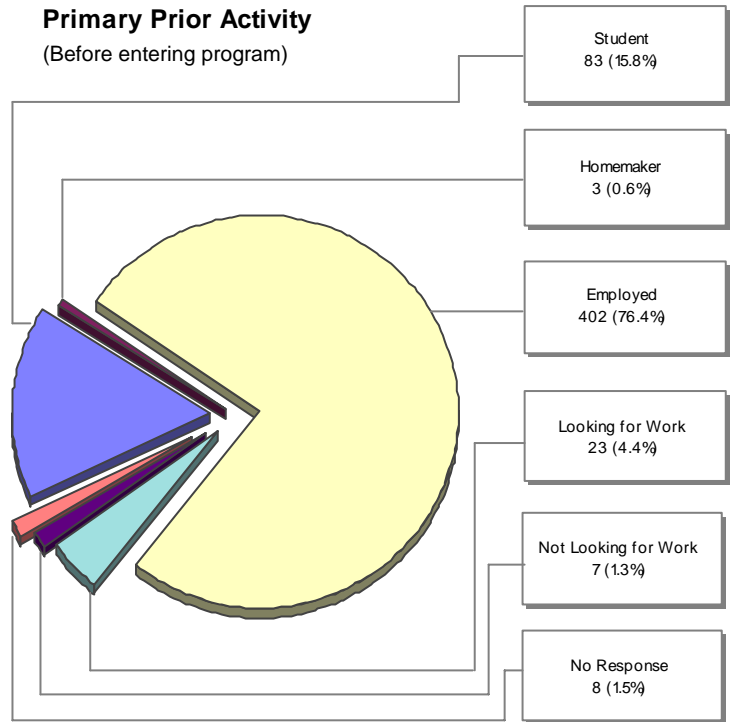
Industrial Technologies Division

Number of Respondents in this Division: 526

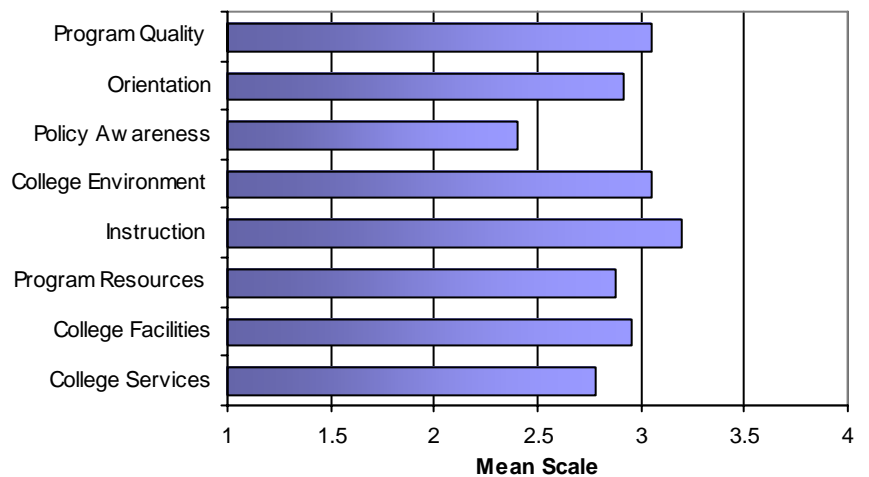
Programs in this report:

- Advanced Network Technology
- APP Bricklaying
- APP Cabinet Making
- APP Carpenter
- APP Electrical
- APP Landscape Technician
- APP Painting & Decorating
- APP Plumbing
- APP Power Electrician
- APP Refrigeration
- APP Sprinkler/Fire Prot Installer
- APP Steamfitting
- Architectural/Engineering Technology
- Building Design CAD Technology
- Computer Engineering Technology
- Electrical
- Electrical Engineering Technology
- Electronic and Network Technician
- Electronic Engineering Technology
- Environmental Protection Technology
- Geographic Information Systems Technology
- Geomatics Technology
- Greenspace Management
- Instrumentation Engineering Technology
- Municipal Engineering Technology
- Piping Trades
- Refrigeration and Air Conditioning
- Structural Engineering Technology

Primary Prior Activity
(Before entering program)



Summary of Student Divisional Ratings

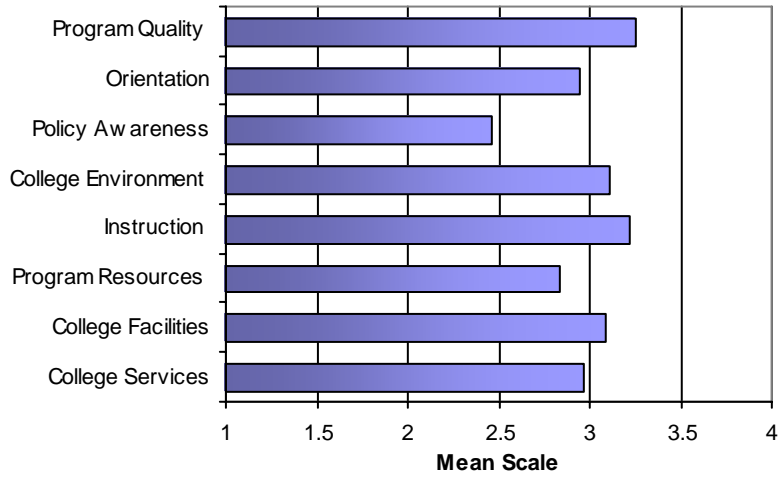


Programs with less than 5 respondents are not illustrated in this report but are included in the Divisional statistics.

Advanced Network Technology

One-Year Advanced Diploma Program

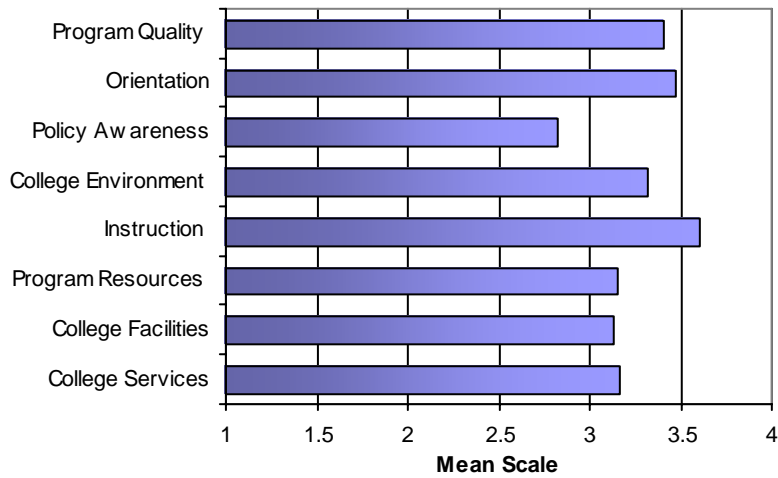
Number of Respondents: 10



APP Bricklaying

Apprenticeship Program

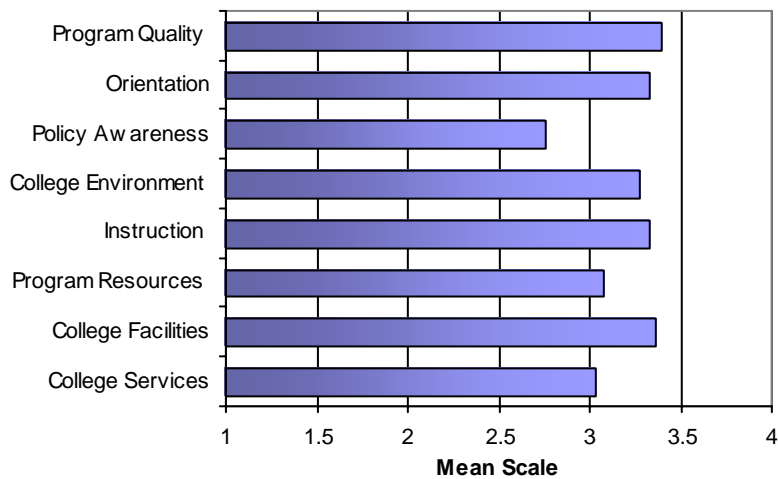
Number of Respondents: 18



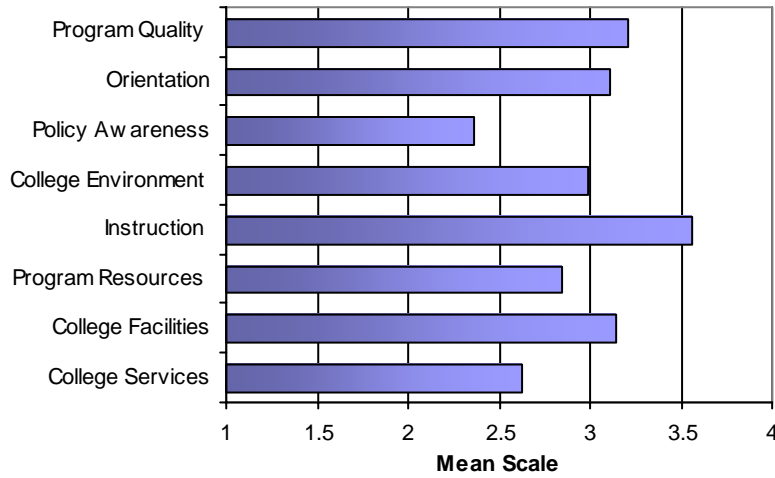
APP Cabinet Making

Apprenticeship Program

Number of Respondents: 31

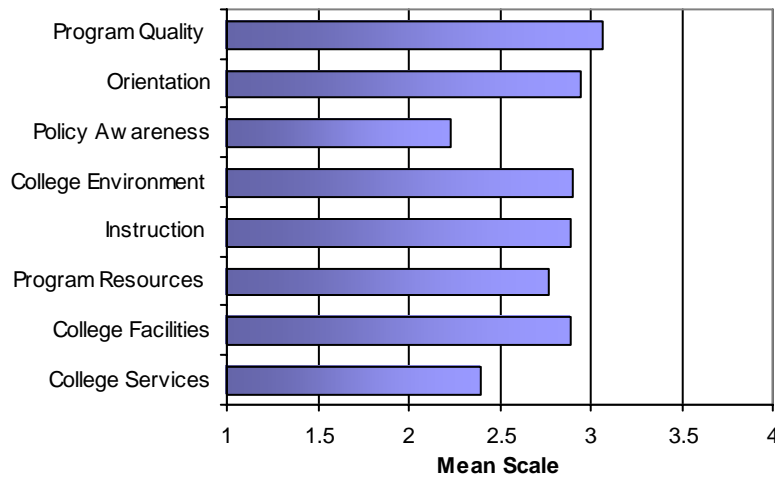


APP Carpenter



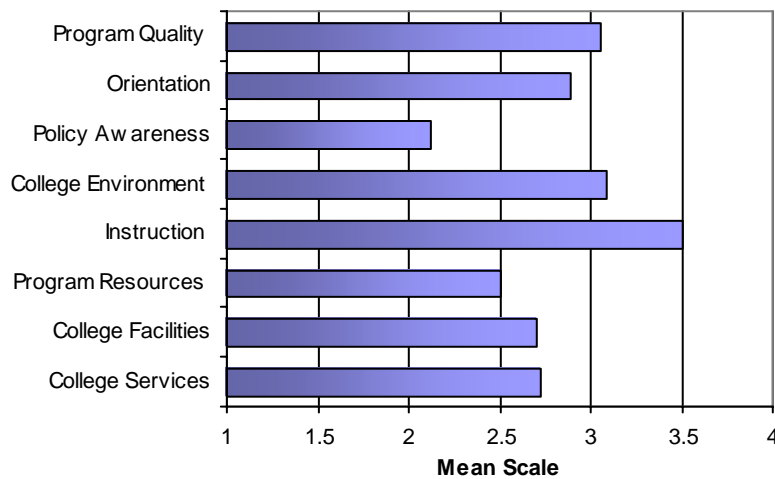
Apprenticeship Program
Number of Respondents: 42

APP Electrical



Apprenticeship Program
Number of Respondents: 36

APP Landscape Technician

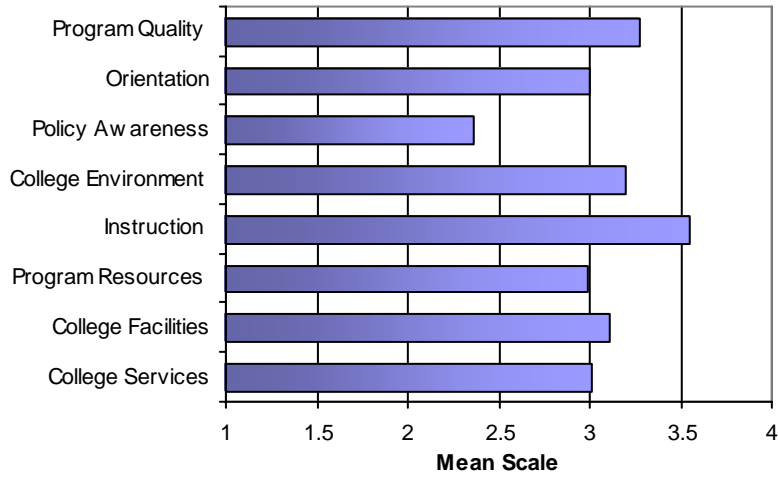


Apprenticeship Program
Number of Respondents: 20

APP Painting & Decorating

Apprenticeship Program

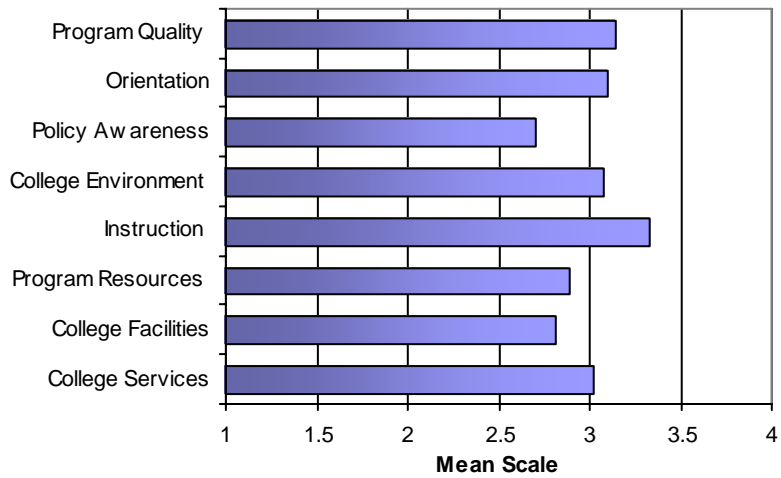
Number of Respondents: 14



APP Plumbing

Apprenticeship Program

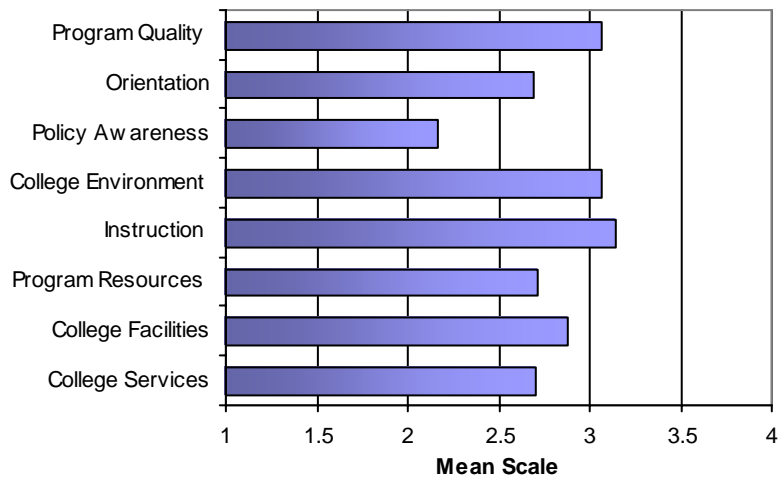
Number of Respondents: 30



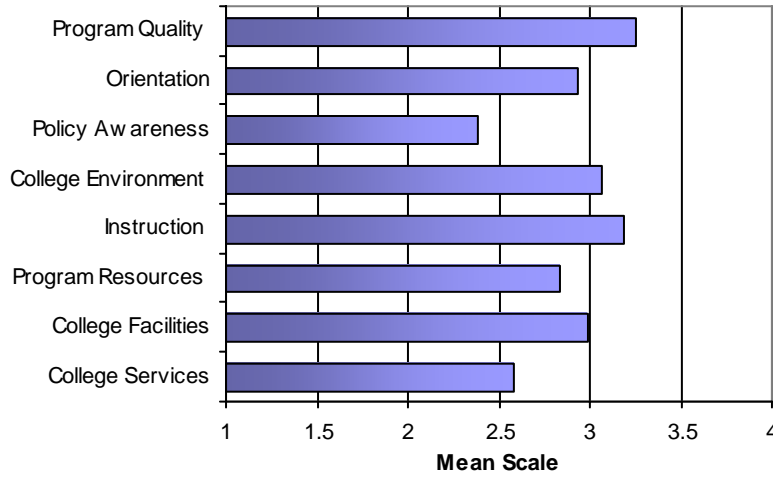
APP Power Electrician

Apprenticeship Program

Number of Respondents: 29

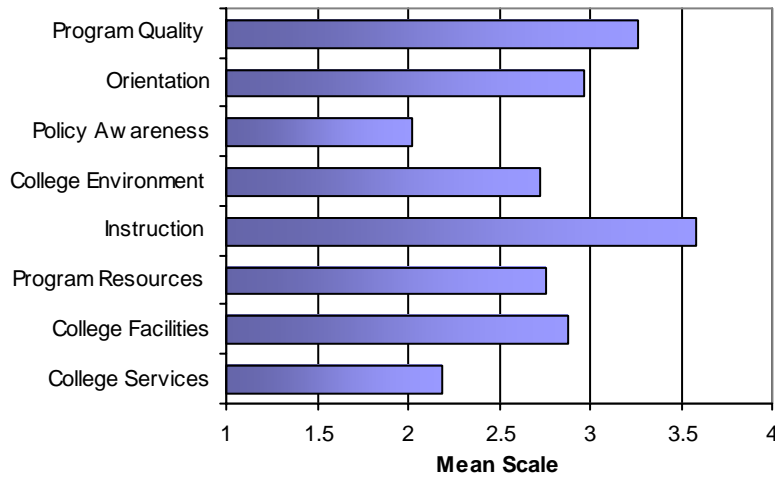


APP Refrigeration



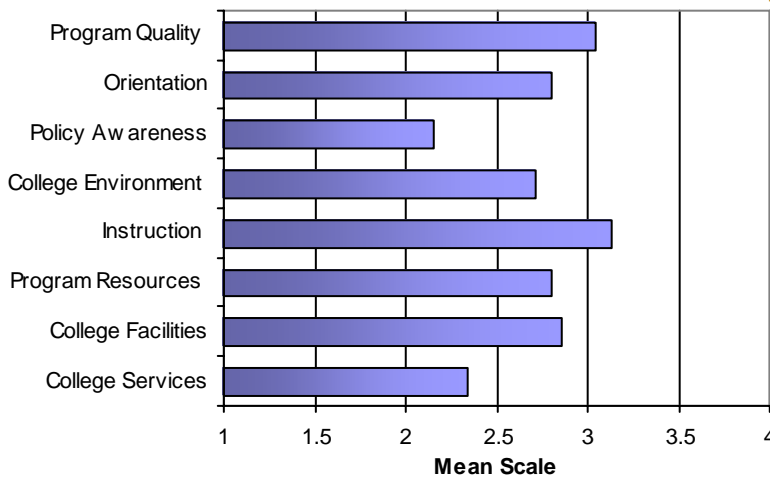
Apprenticeship Program
Number of Respondents: 35

APP Sprinkler/Fire Prot Installer



Apprenticeship Program
Number of Respondents: 15

APP Steamfitting

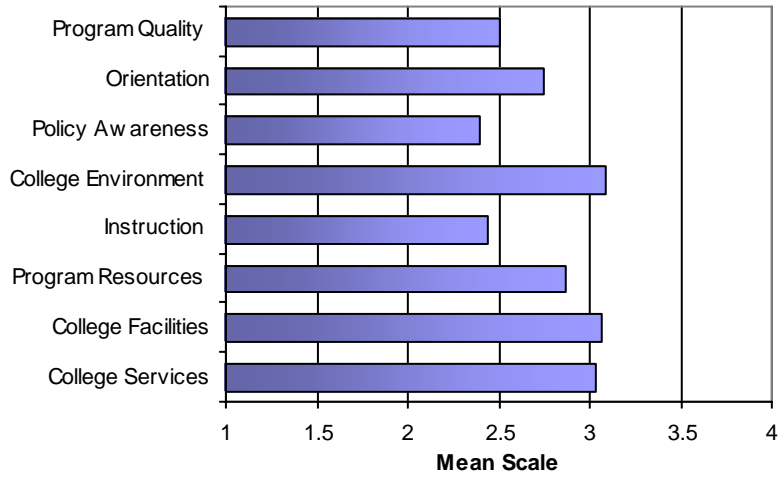


Apprenticeship Program
Number of Respondents: 18

Architectural/Engineering Technology

32-Month Diploma Program

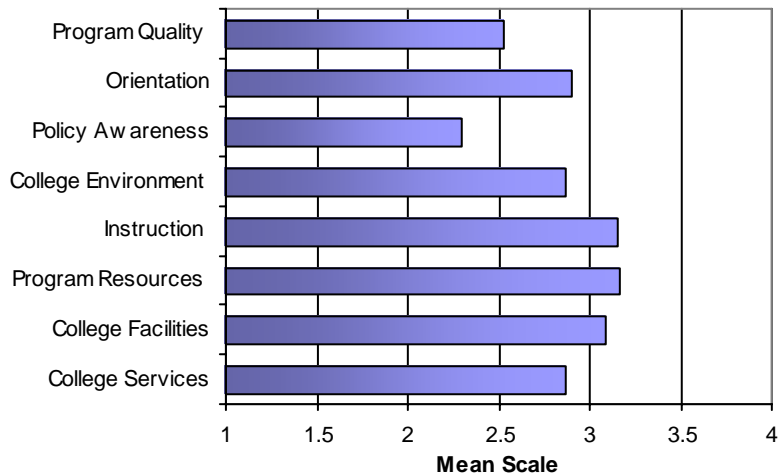
Number of Respondents: 13



Building Design CAD Technology

Twenty-Month Diploma Program

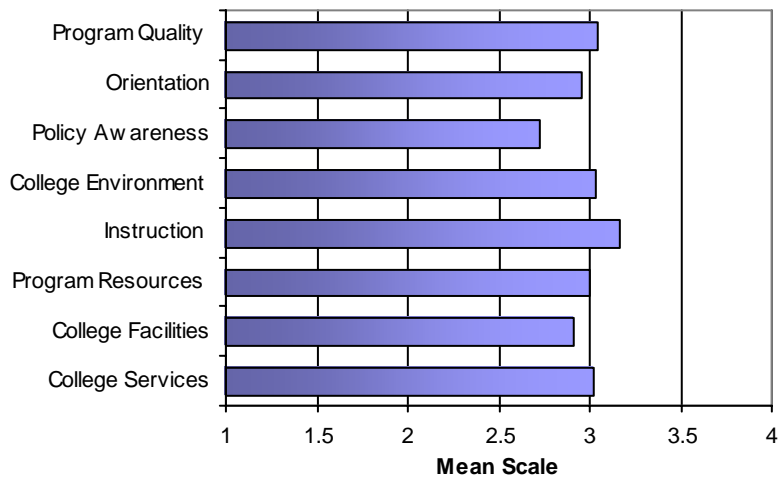
Number of Respondents: 10



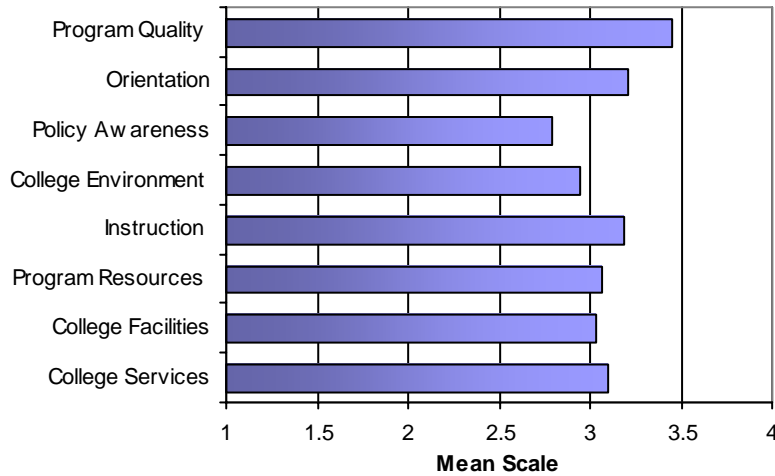
Computer Engineering Technology

Two-Year Diploma Program

Number of Respondents: 14



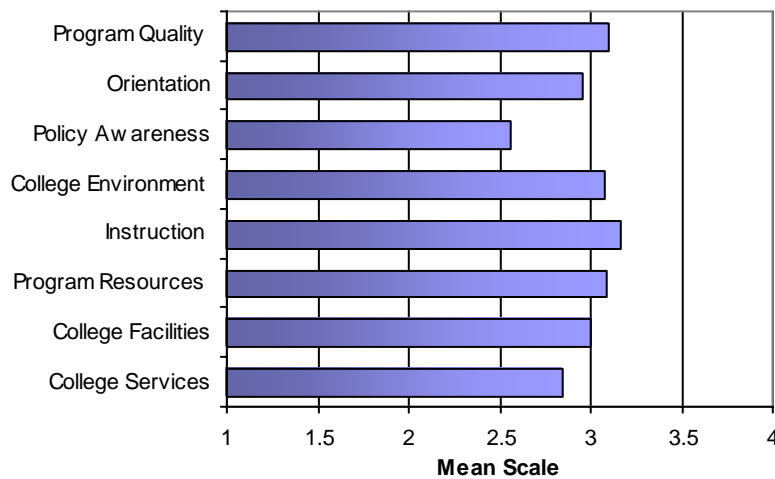
Electrical



One-Year Certificate Program

Number of Respondents: 13

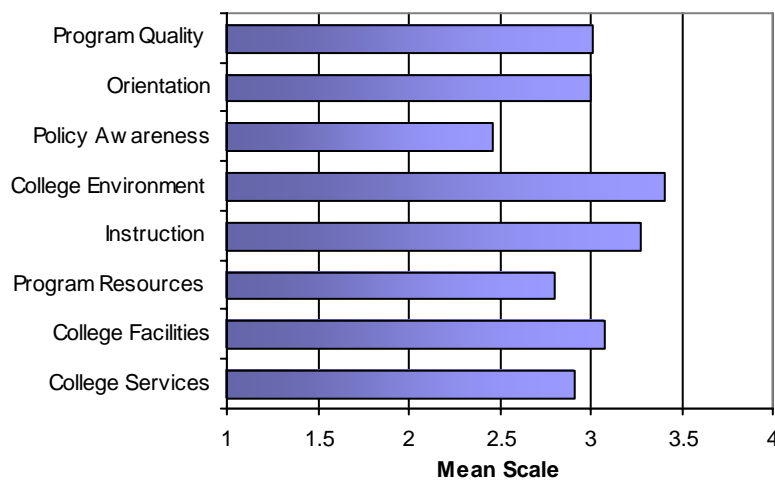
Electrical Engineering Technology



Two-Year Diploma Program

Number of Respondents: 24

Electronic and Network Technician



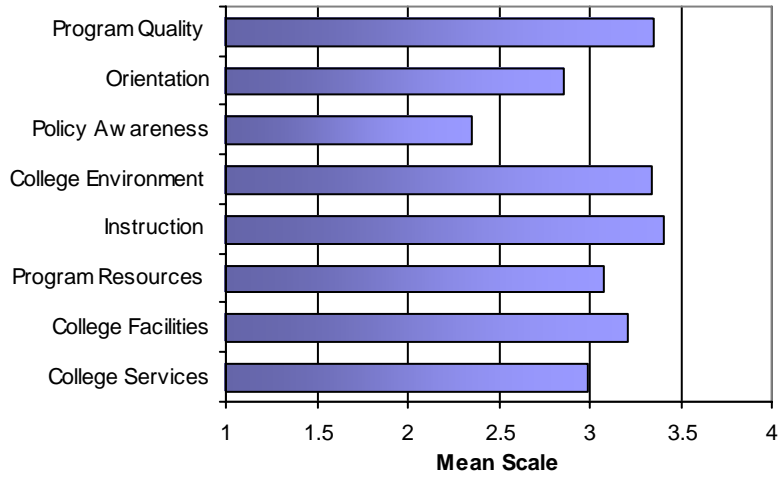
One-Year Certificate Program

Number of Respondents: 15

Electronic Engineering Technology

Two-Year Diploma Program

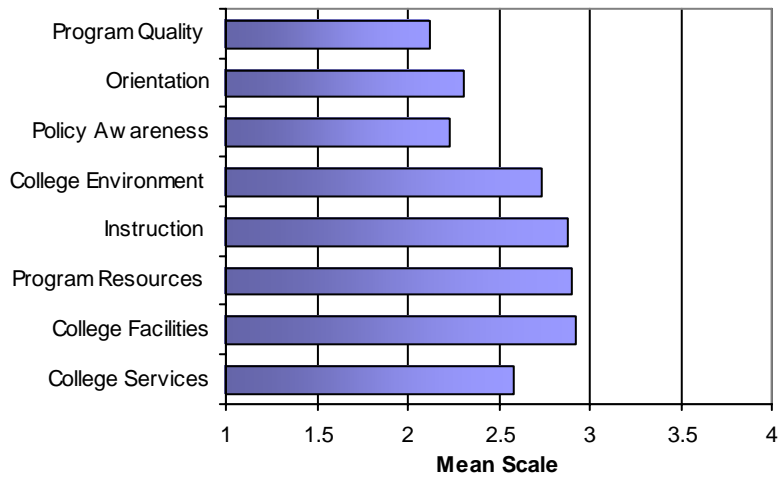
Number of Respondents: 8



Environmental Protection Technology

32-Month Diploma Program

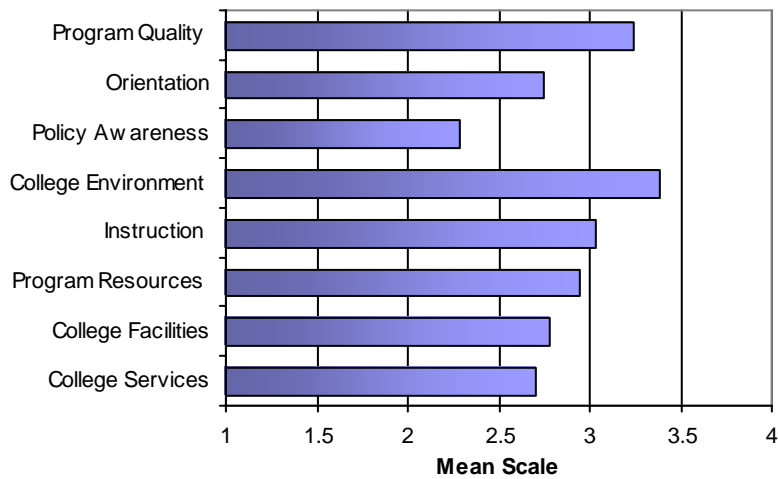
Number of Respondents: 13



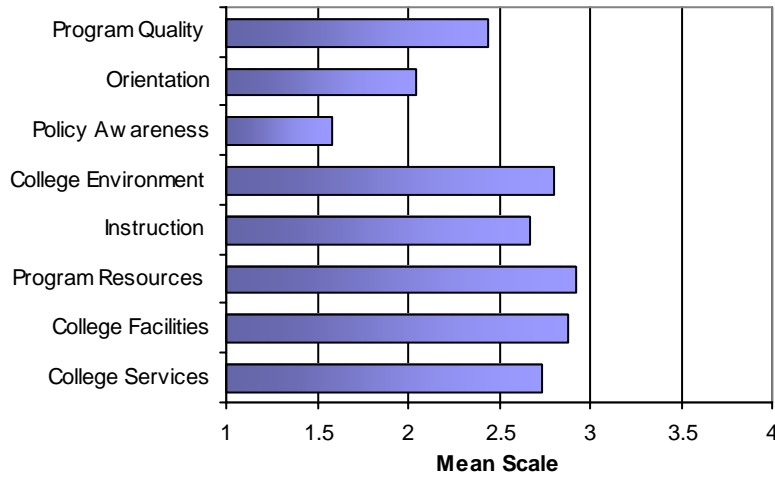
Geographic Information Systems Technology

One-Year Advanced Diploma Program

Number of Respondents: 9



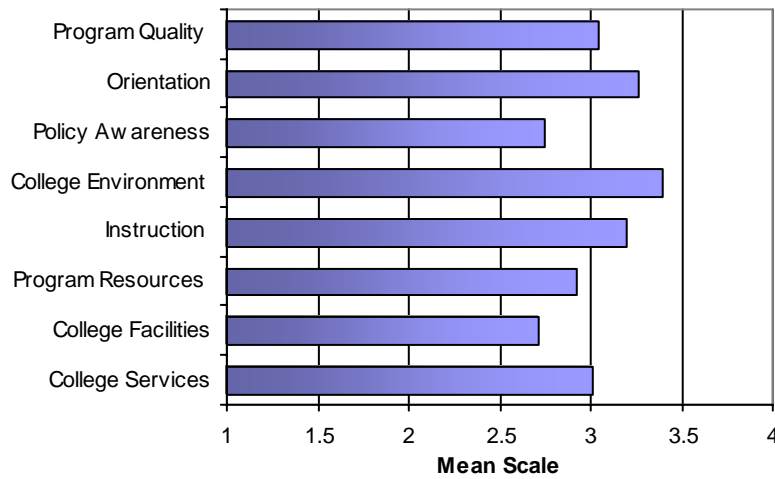
Geomatics Technology



32-Month Diploma Program

Number of Respondents: 12

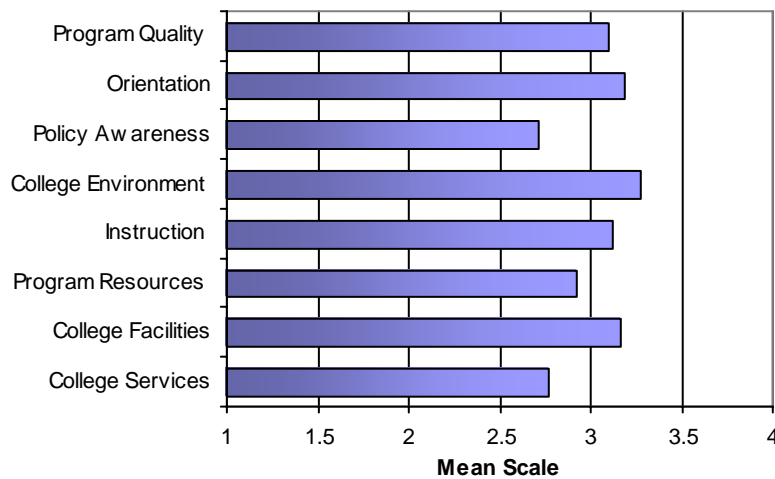
Greenspace Management



28-Month Diploma Program

Number of Respondents: 13

Instrumentation Engineering Technology



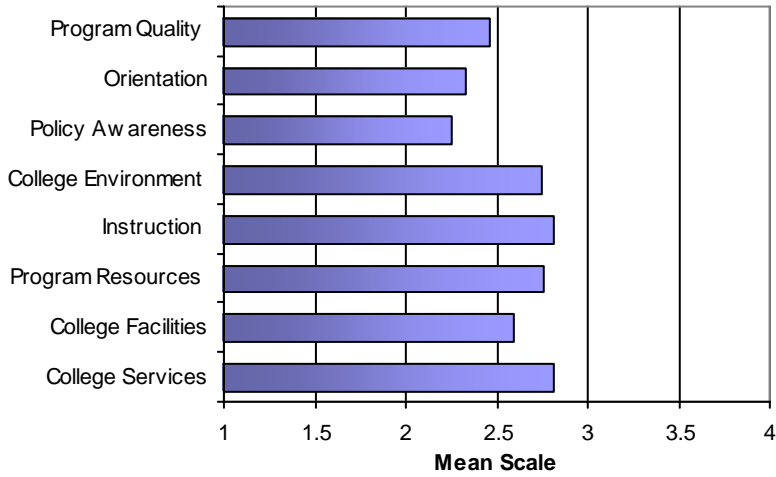
Two-Year Diploma Program

Number of Respondents: 10

Municipal Engineering Technology

32-Month Diploma Program

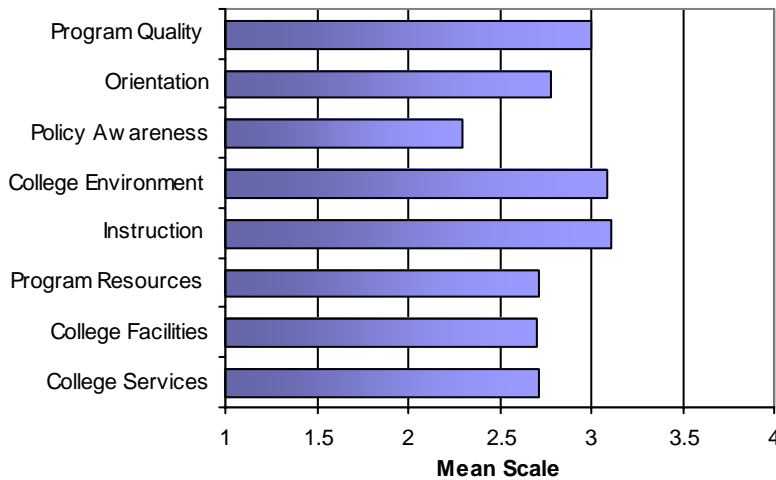
Number of Respondents: 25



Piping Trades

One-Year Certificate Program

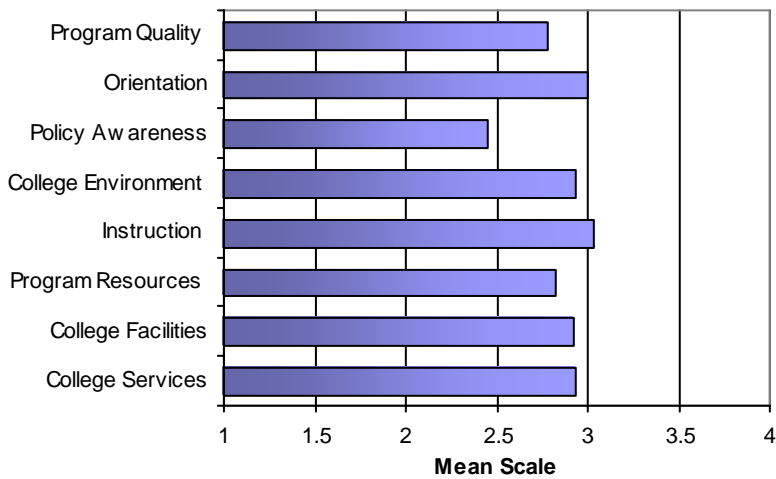
Number of Respondents: 23



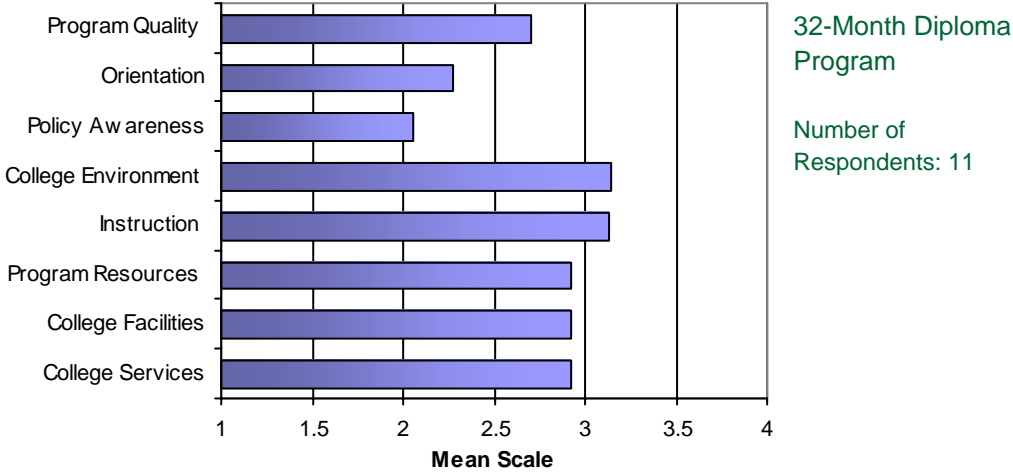
Refrigeration and Air Conditioning

One-Year Certificate Program

Number of Respondents: 11



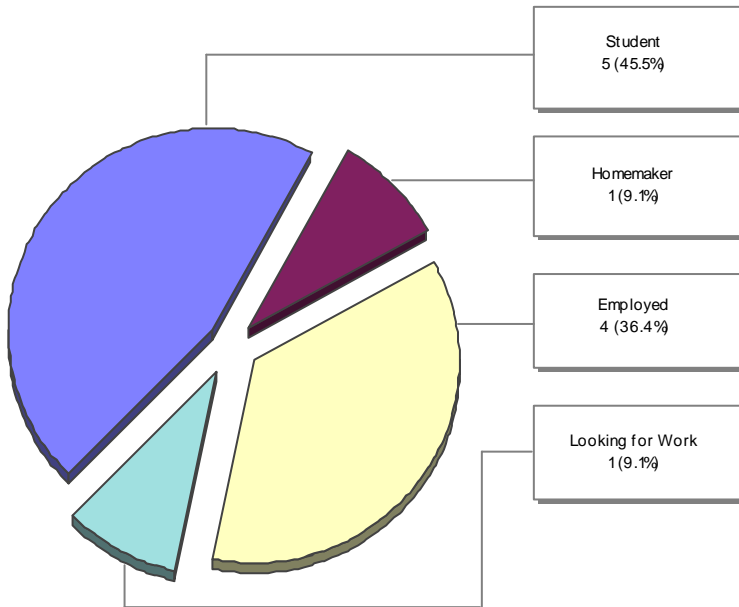
Structural Engineering Technology



Student Services Division

Primary Prior Activity

(Before entering program)



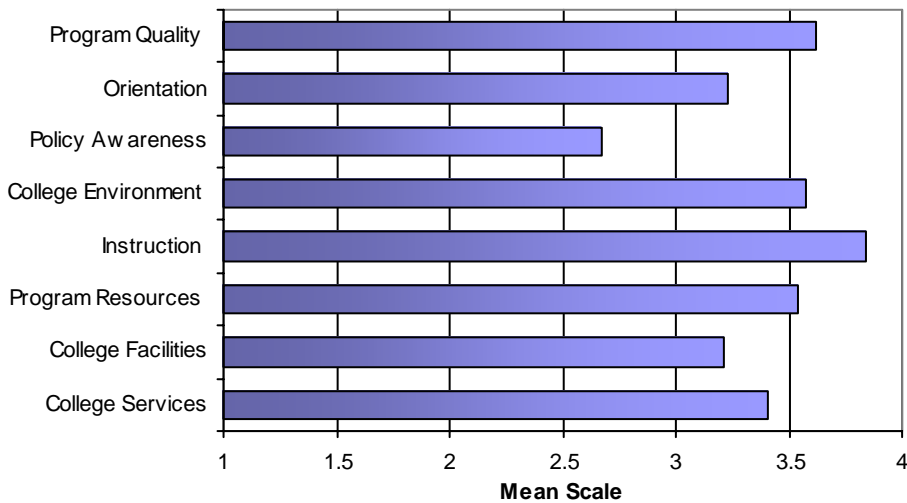
Number of Respondents in this Division: 11

Programs in this report:

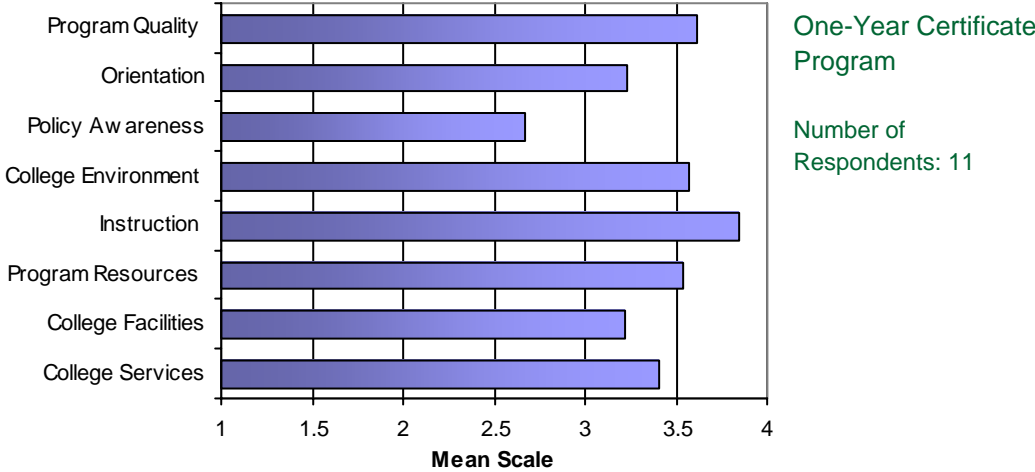
Deaf Studies

Programs with less than 5 respondents are not illustrated in this report but are included in the Divisional statistics.

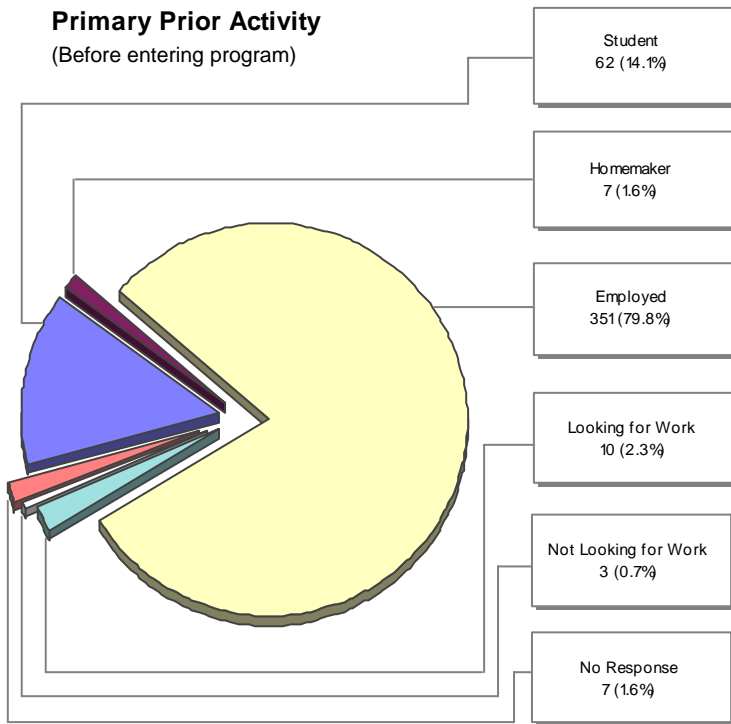
Summary of Student Divisional Ratings



Deaf Studies



Transportation, Aviation and Manufacturing Division

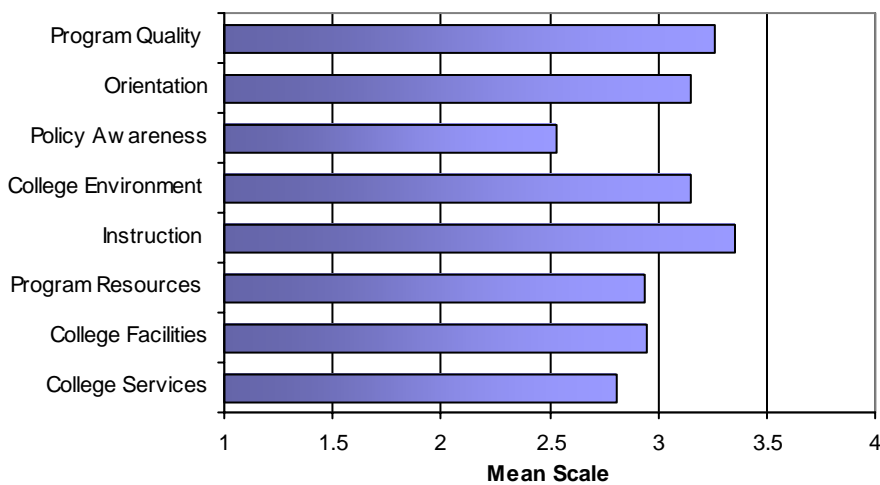


Number of Respondents in this Division: 440

Programs in this report:

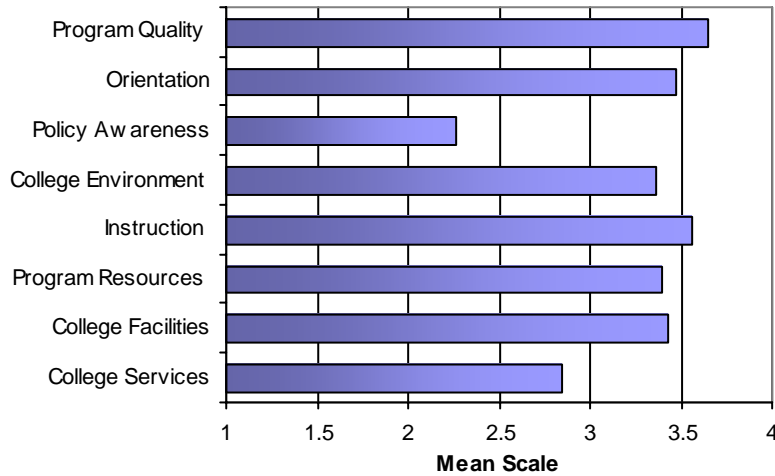
- APP Automotive Service Education Program
- APP Automotive Service Technician
- APP Boilermaker
- APP Machinist
- APP Motor Vehicle Body Repairer
- APP Motor Vehicle Mechanic ASSET
- APP Sheet Metal
- APP Transport Trailer Mechanic
- APP Transport Truck/Bus Mechanic
- Automotive Technician - Certificate
- Automotive Technician - Diploma
- Automotive Technician - Work Experience
- Heavy Duty Equipment Mechanic
- Manufacturing Technician
- Outdoor Power Equipment Technician

Summary of Student Divisional Ratings



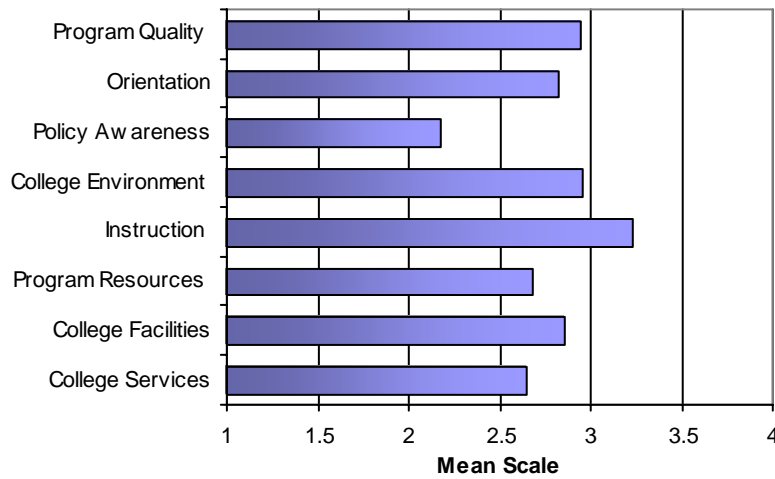
Programs with less than 5 respondents are not illustrated in this report but are included in the Divisional statistics.

APP Automotive Service Education Program



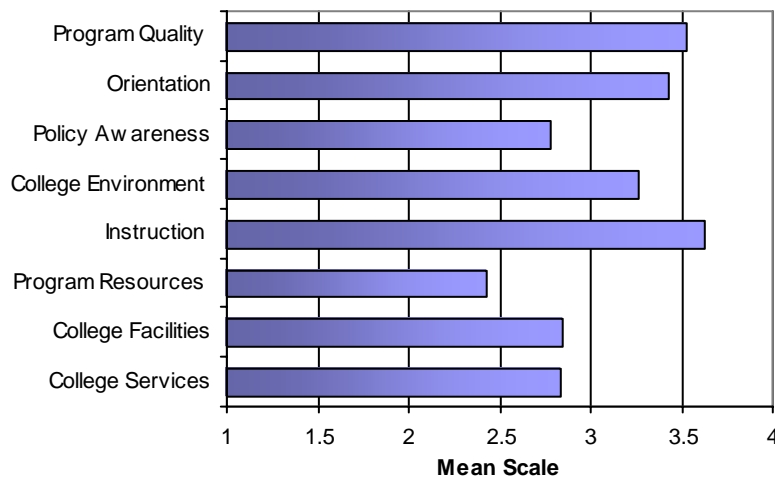
Apprenticeship Program
 Number of Respondents: 31

APP Automotive Service Technician



Apprenticeship Program
 Number of Respondents: 46

APP Boilermaker

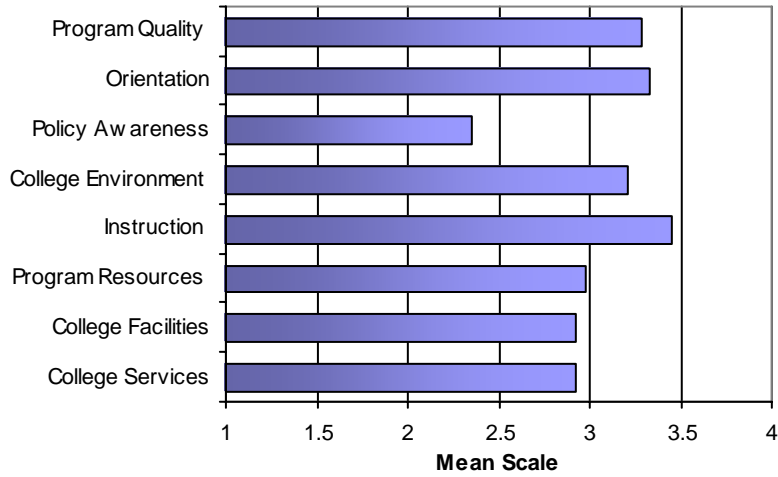


Apprenticeship Program
 Number of Respondents: 19

APP Machinist

Apprenticeship Program

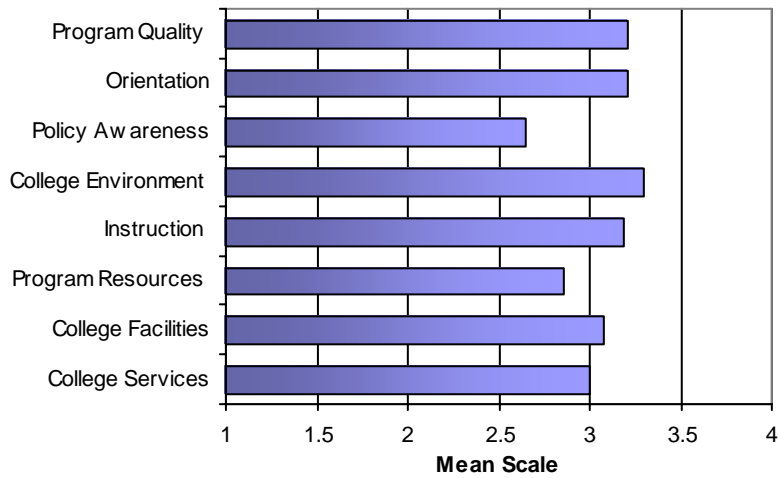
Number of Respondents: 24



APP Motor Vehicle Body Repairer

Apprenticeship Program

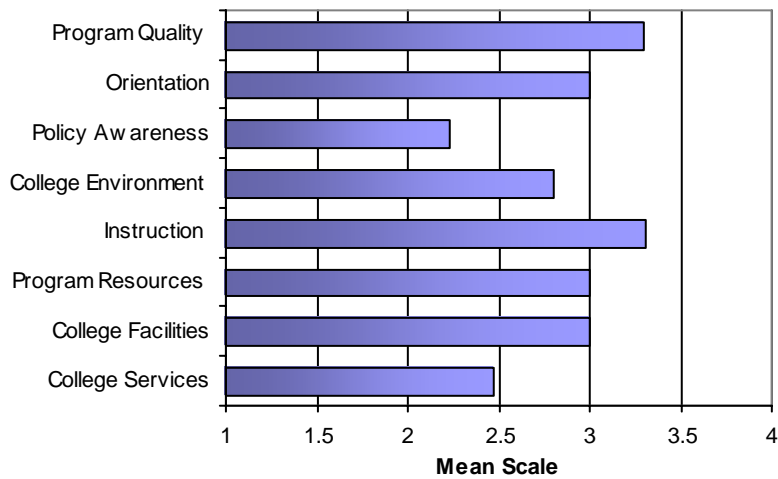
Number of Respondents: 29



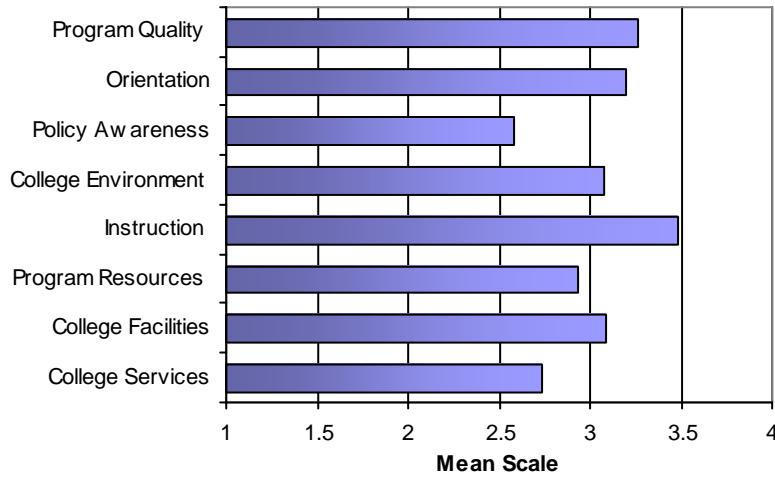
APP Motor Vehicle Mechanic ASSET

Apprenticeship Program

Number of Respondents: 17

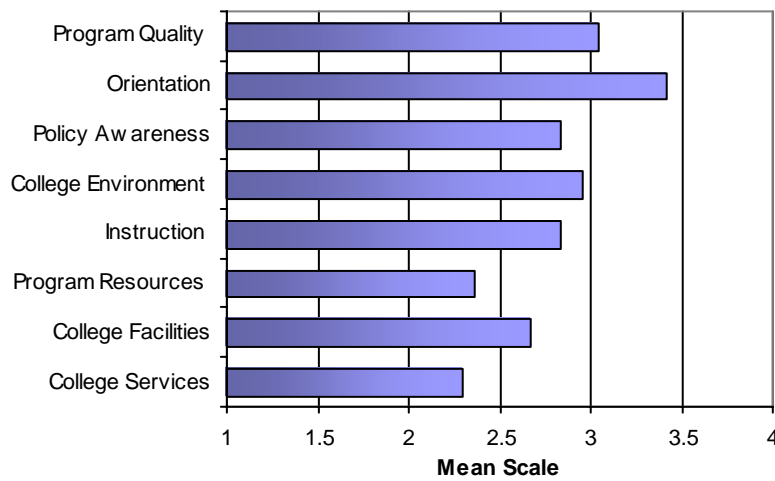


APP Sheet Metal



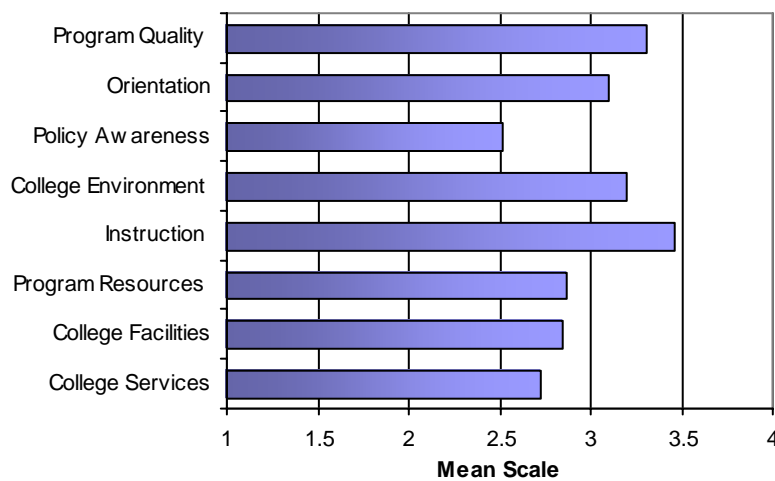
Apprenticeship Program
Number of Respondents: 35

APP Transport Trailer Mechanic



Apprenticeship Program
Number of Respondents: 12

APP Transport Truck/Bus Mechanic

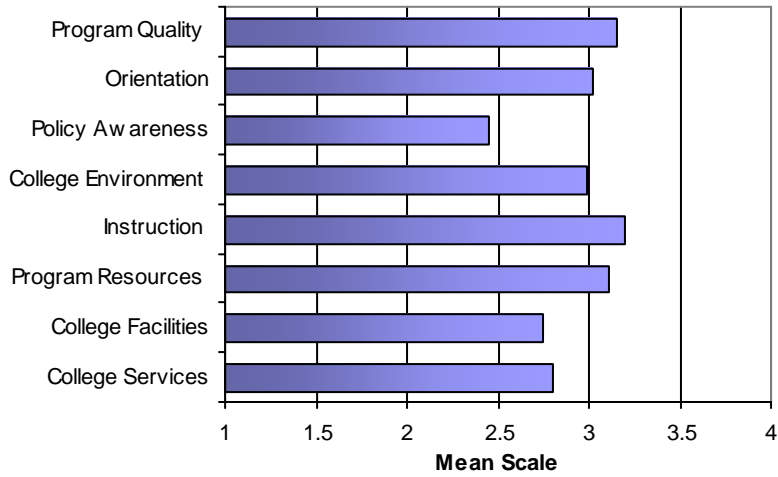


Apprenticeship Program
Number of Respondents: 95

Automotive Technician - Certificate

One-Year Certificate Program

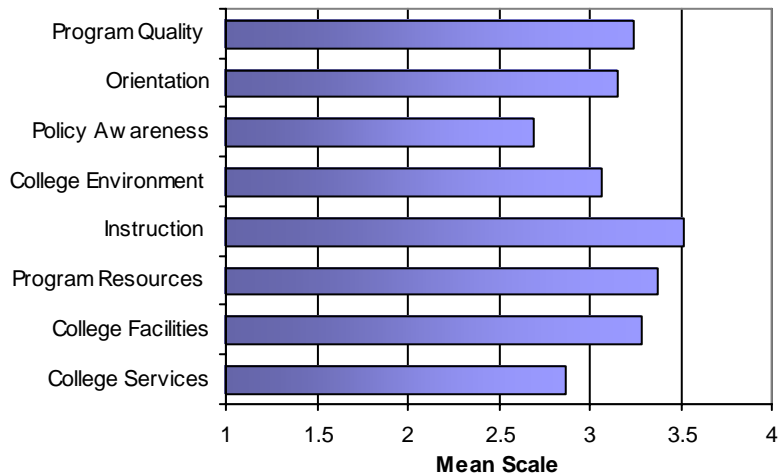
Number of Respondents: 41



Automotive Technician - Diploma

Two-Year Diploma Program

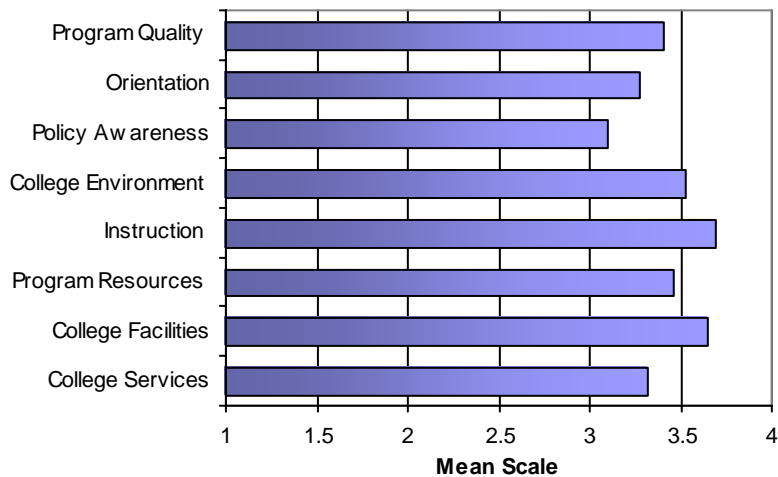
Number of Respondents: 13



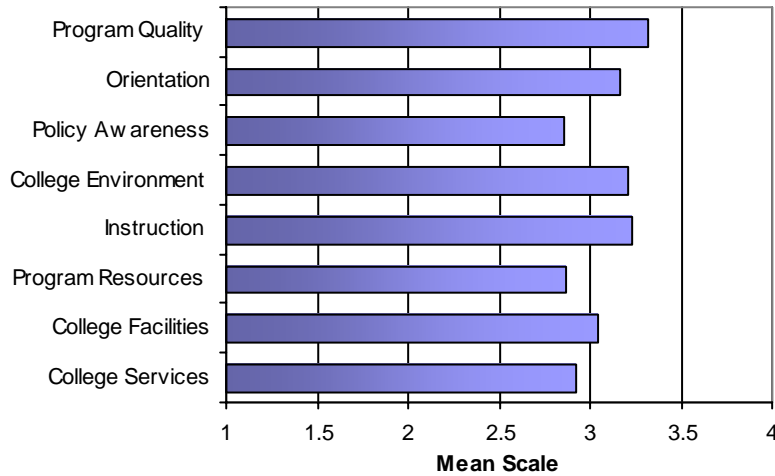
Automotive Technician - Work Experience

One-Year Certificate Program

Number of Respondents: 9



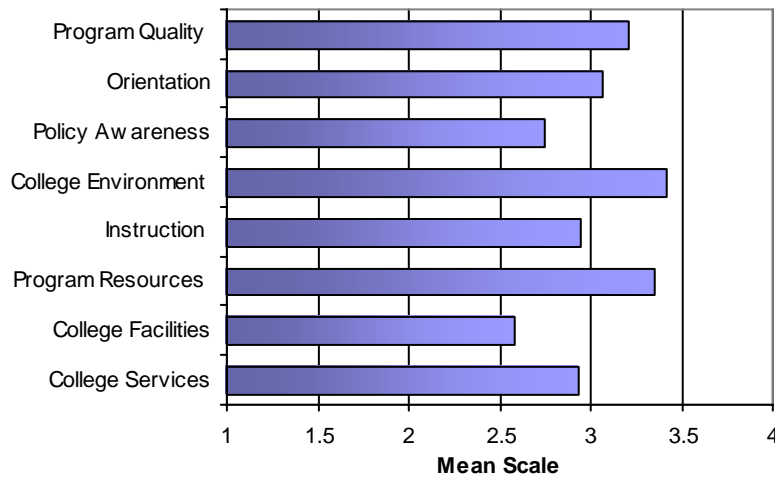
Heavy Duty Equipment Mechanic



One-Year Certificate Program

Number of Respondents: 28

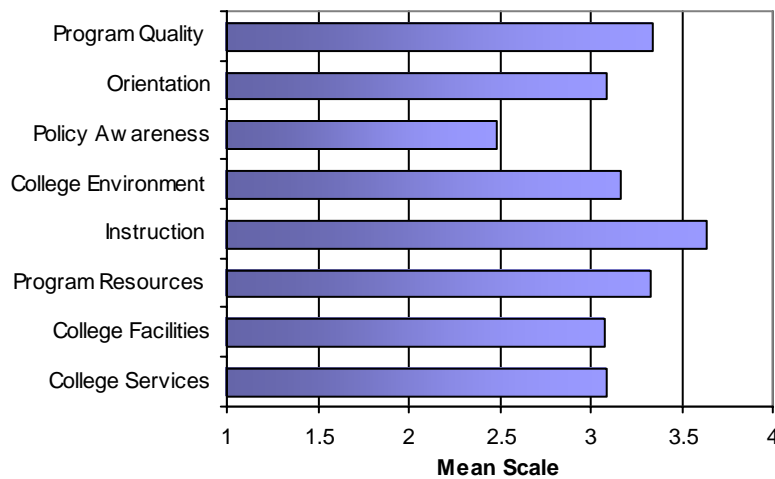
Manufacturing Technician



Two-Year Diploma Program

Number of Respondents: 16

Outdoor Power Equipment Technician



One-Year Certificate Program

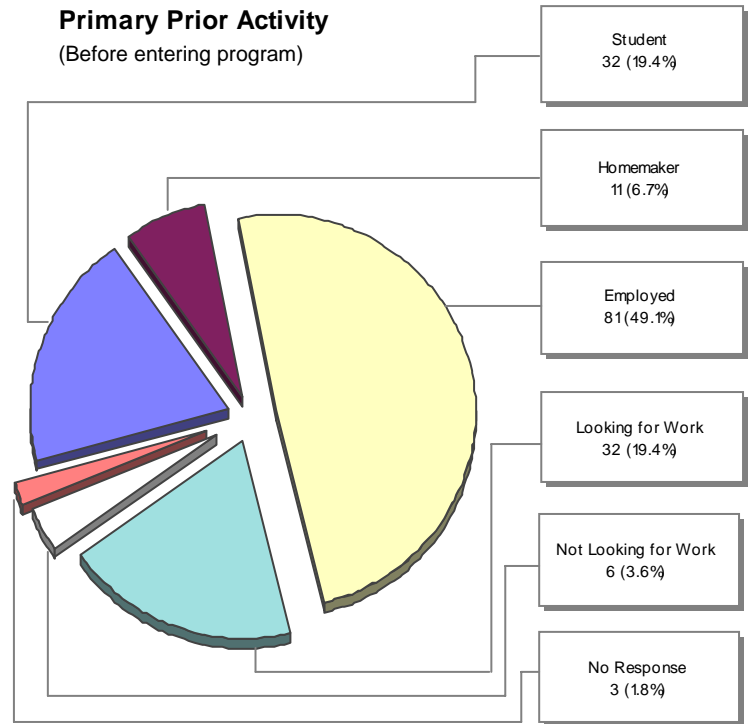
Number of Respondents: 12

Continuing Education Division

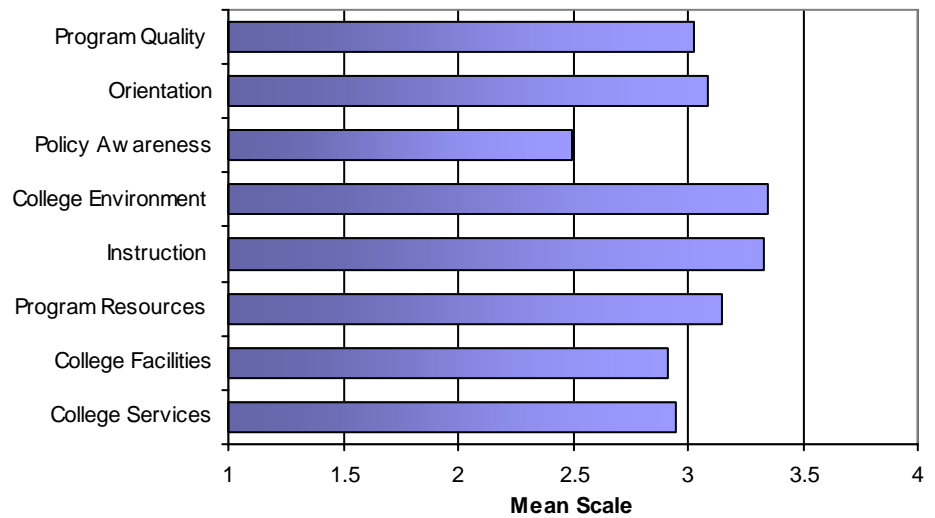
Number of Respondents in this Division: 165

- Full-time Continuing Education Programs in this report:**
- Applied Counselling
 - Legal Administrative Assistant
 - Medical Transcription
 - Office Technician
 - Para Educator
 - Photography - Enhanced
 - Power Engineering Fifth Class
 - Recreation Facilitator for Older Adults
 - Sterile Processing Technician

Programs with less than 5 respondents are not illustrated in this report but are included in the Divisional statistics.



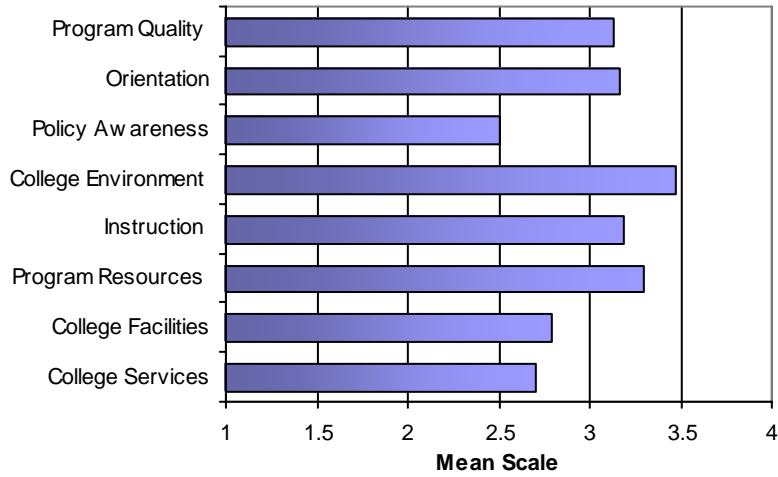
Summary of Student Divisional Ratings



Applied Counselling

Six-Month
Certificate Program

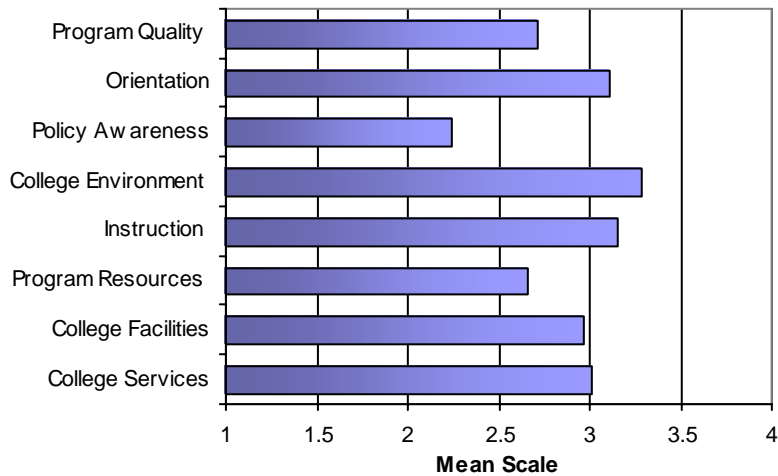
Number of
Respondents: 31



Legal Administrative Assistant

Eleven-Month
Certificate Program

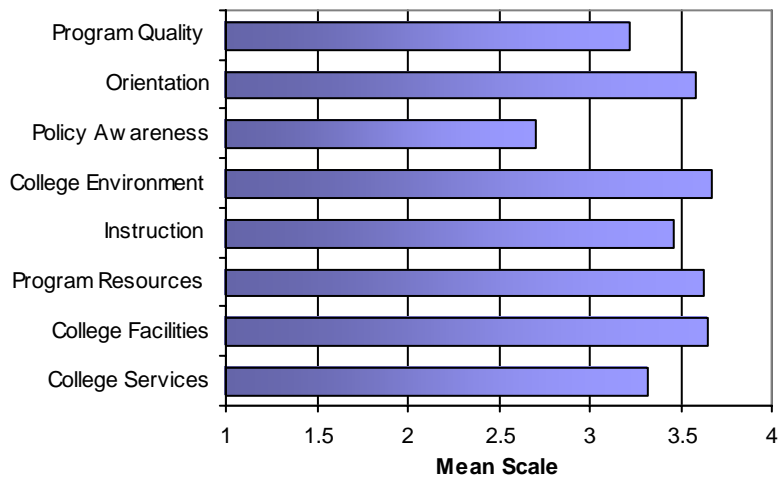
Number of
Respondents: 10



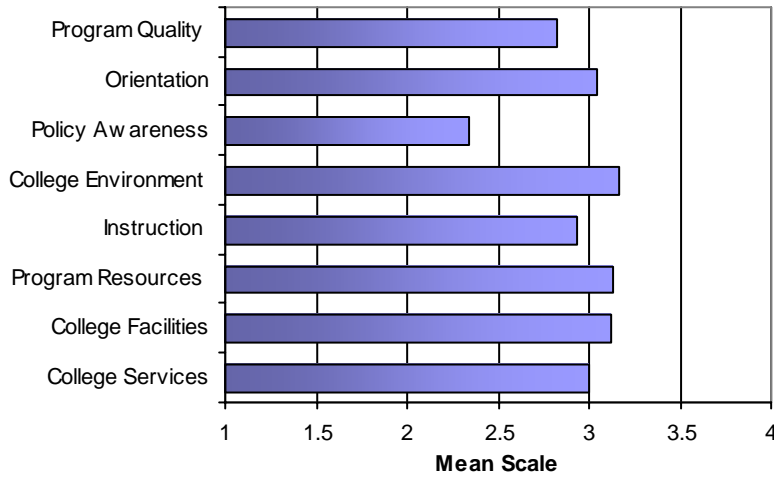
Medical Transcription

Certificate Program

Number of
Respondents: 13



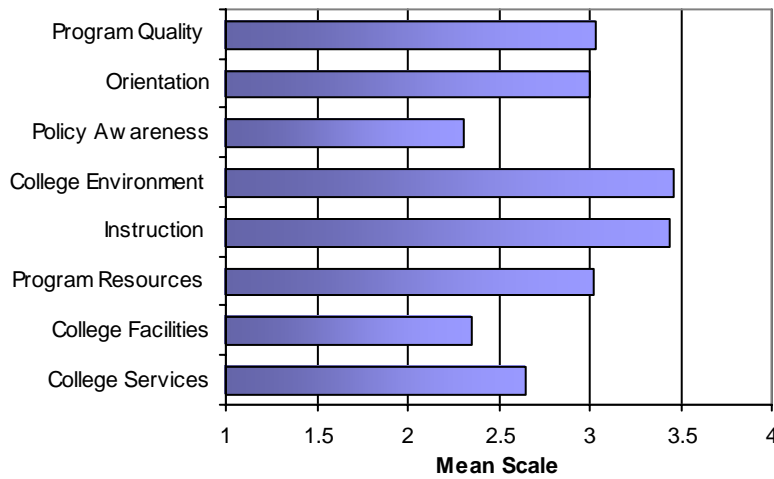
Office Technician



Seven-Month
Certificate Program

Number of
Respondents: 11

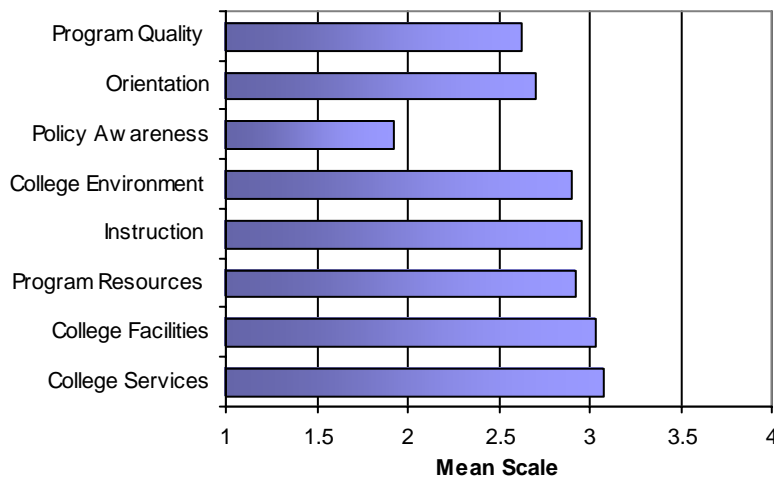
Para Educator



Five-Month
Certificate Program

Number of
Respondents: 39

Photography - Enhanced



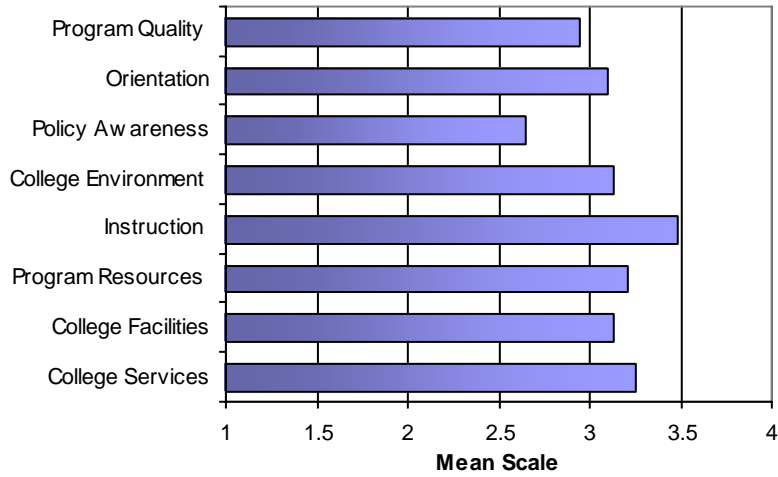
Eight-Month
Certificate Program

Number of
Respondents: 13

Power Engineering Fifth Class

Three-Month
Certificate Program

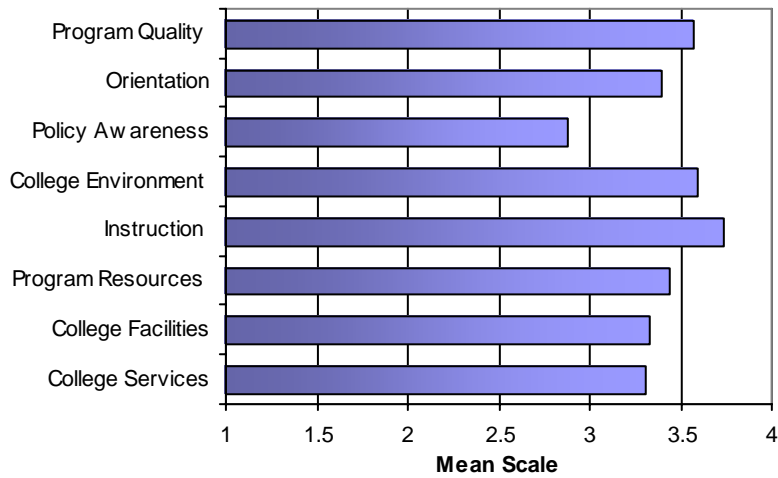
Number of
Respondents: 16



Recreation Facilitator for Older Adults

7.5-Month Certificate
Program

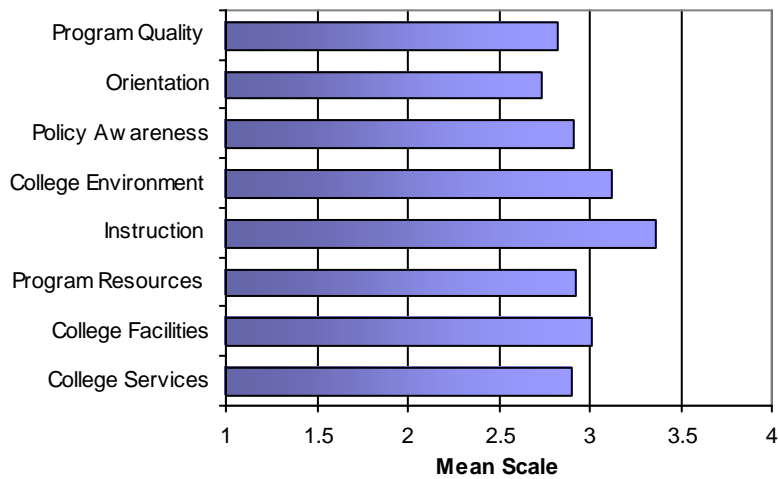
Number of
Respondents: 16



Sterile Processing Technician

Certificate Program

Number of
Respondents: 16



Appendix A - Programs with less than 5 respondents

Aboriginal Education

- ACCESS Integrated Science and Technology

Applied Sciences

- Medical Radiological Assistant
- MRI and Spectroscopy

Industrial Technologies

- Carpentry and Woodworking
- Wood Products Manufacturing Technology - Diploma

Transportation, Aviation and Manufacturing

- Technical Communications

Appendix B - Quality Categories

Quality Category (Dimension)	Chart Category	Survey Question Number
Overall Program Quality	Program Quality	12 to 17
Quality of Orientation	Orientation Quality	18 to 19
Quality of familiarization with College policies	Policy Awareness	20 to 24
Quality of the welcoming, inclusive college environment	College Environment	25 to 31
Quality of Instruction	Instruction	32 to 35
Quality of program resources	Program Resources	36 to 41
Quality of College facilities	College Facilities	42 to 47
Quality of College services	College Services	48 to 55

Appendix C - Quality Category Questions

Note: Question 1 - 11 ask for demographic information.

Program Quality (Program Quality)

12. Before I applied, I had a good understanding of the program's purpose.
13. The training I have received in this program has met my expectations.
14. The program content is relevant to my career goals.
15. The tuition fee for this program is reasonable for the education provided.
16. Overall, I am satisfied with this program.
17. I would recommend this program to others.

Quality of Orientation (Orientation Quality)

18. The orientation to the program provided by the Department was effective in explaining the requirements of the program.
19. Upon admission to the program, I was made aware of my role and responsibilities as a student.

Appendix C - Quality Category Questions continued

Quality of familiarization to College policies (Policy Awareness)

20. I am familiar with the College's challenge for credit policy.
21. I am familiar with the College's transfer of credit policy.
22. I am familiar with the College's appeals procedure as it relates to academic and/or discipline issues.
23. I am familiar with the College's harassment policy.
24. I am familiar with Prior Learning Assessment at the College.

Quality of the welcoming, inclusive college environment (College Environment)

25. My gender does not limit my success in the program.
26. My race or ethnic origin does not limit my success in the program.
27. My physical ability does not limit my success in the program.
28. My financial situation does not limit my success in the program.
29. My English language skills do not limit my success in the program.
30. My Mathematical skills do not limit my success in the program.
31. My experience in the program has increased my awareness of values and cultures that are different from my own.

Quality of Instruction (Instruction)

32. The instructors treat students with respect.
33. The instructors are effective in delivering the program.
34. The instructors are knowledgeable in the areas they teach.
35. Overall, I am satisfied with the quality of instruction within the program.

Quality of program resources (Program Resources)

36. The training materials (texts, workbooks, handouts, etc.) used in the program are current.
37. I am satisfied with the quality of the training materials used in this program.
38. The equipment used in this program is appropriate for learning the required skills.
39. The equipment used in this program is current with industry.
40. There is a sufficient quantity of equipment provided for the program.
41. There is a sufficient quantity of CURRENT library resource materials for use by students in the program.
(Books, video tapes, audio tapes, periodicals, pamphlets, etc.)

Appendix C - Quality Categories Questions continued

Quality of College facilities (College Facilities)

42. The classroom facilities are appropriate.
43. The shop/lab facilities are appropriate.
44. Adequate study space is available to students.
45. Student lounge space is adequate.
46. The gymnasium/fitness facilities are satisfactory.
47. Overall, the College facilities meet my needs as a student.

Quality of College services (College Services)

48. I am satisfied with the service provided from the Academic Support Services (Tutorial Centre).
49. I am satisfied with the service I received from the Counselling Centre.
50. I am satisfied with the service I received from the Job Centre.
51. I am satisfied with the service I received from the Library.
52. I am satisfied with the service I received from the Bookstore.
53. I am satisfied with the service I received from the Enrolment Services Department.
54. I am satisfied with the service I received from the Print and Graphic Centre/Copy Centre.
55. Overall, I am satisfied with the quality of service provided by the College.

Appendix D - Technical Overview of Analytic Techniques²

Factor analysis is a statistical approach used to analyze interrelationships among a large number of variables and to explain these variables in terms of their common underlying dimensions or factors (Fisher & van Belle, 1993; Green & Salkind, 2003; Pedhazur & Schmelkin, 1991). It is often used in data reduction to identify a small number of factors that explain most of the variance observed in a much longer number of variables. The analysis compresses the original variables into a smaller set of dimensions with a minimum loss of information. There are two main types of factor analysis, confirmatory and exploratory³.

The analysis in this report was primarily exploratory. Exploratory factor analysis is used to discover the factor structure of a set of variables. Generally, it generates a correlation matrix for all the variables. A correlation matrix is a rectangular array of the correlation coefficients of the variables with each other. Factors (dimensions) are extracted from the correlation matrix based on the correlation coefficients of the variables. Then, the factors are rotated in order to maximize the relationship between the variables and some of the factors. In general, the number of dimensions or factors is much smaller than the number of original variables. Additionally, it is possible to compute factor or dimension scores for use in subsequent analyses. As well, the reliability of dimensions, which generally include a number of items, can be tested.

A first step is to assess whether or not the data set is appropriate for factor analysis. The overall factor analysis was evaluated through the Kaiser-Meyer-Olkin (KMO) and Bartlett's Tests. The KMO measures the sampling adequacy which should be greater than 0.6 for a satisfactory factor analysis to proceed (Tabachnik & Fidell, 2001). The Bartlett's test⁴ of sphericity examines whether there are adequate intercorrelations between the items to use factor analysis and it should be significant ($p \leq .05$).

For the factor analysis of the SEPS, the results (Table 1) indicate a satisfactory analysis:

Table 1. KMO and Bartlett's Test Results for SEPS 2003-04 Factor Analysis

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.946
Bartlett's Test of Sphericity	Approx. Chi-Square	11699.727
	df	946
	Sig.	.000

The steps in factor analysis are to select an extraction method for the correlations from the matrix and a rotation method to maximize the loadings of the items into a factor. Examining the correlations among the many survey items in the Student Evaluation Program Survey (SEPS) for 2003-04 revealed that there was a significant correlation among various subgroups of questions. There are two main extraction methods, principal components analysis or common factor analysis (there are several specific techniques). Two strategies were used in conducting the exploratory factor analysis.

² Research and Planning would like to thank Ashley Blackman for his advice on the statistical procedures.

³ Exploratory factor analysis is generally used to discover the factor structure of a set of measures. It is often used when researchers have no hypotheses about the nature of the underlying factor structure of their measures. Confirmatory factor analysis requires that a particular factor structure be specified, in which the researcher designates the variables to load on each factor. It provides a fit of the hypothesized factor structure to the observed data. Exploratory factor analysis allows all items to load on all factors.

⁴ A test statistic used to examine the hypothesis that the variables are uncorrelated. It is used to test the suitability of a correlation matrix for factor analysis by examining if the data contain sufficient correlations to warrant analysis (i.e., whether the correlation matrix (variance/covariance matrix) is an identity matrix). If the obtained chi square value is significant, then the correlation matrix to be analyzed is non-random and is suitable for factor analysis.

Appendix D - Technical Overview of Analytic Techniques continued

First, principal component analysis (PCA)⁵ with a varimax⁶ rotation was used for the analysis of the forty-four questions, all of which were attitude-type questions with a four point⁷ agree – disagree scale. Factors are extracted in order and the first factor accounts for the largest amount of variability and the second factor the second most and so on. The factors were initially selected based on the scree plot⁸ (included as Figure 1) and included all factors with an eigenvalue (the variability of a factor)⁹ greater than one. This yielded seven factors. Then the selected factors were rotated through a varimax routine to yield separate uncorrelated factors or dimensions. Factor loading¹⁰ were at a minimum of .30¹¹. Subsequently, the derived factors were examined in relation to the original set of questions and a further analysis was conducted to achieve eight dimensions, which seemed to be more interpretable for the original question items. The scree test and the eigenvalue-greater-than-one criteria are meant to act as guides in determining factors; what is more important is to have a set of factors that arise from the data and are more meaningful (Fabrigar, et. al., 1999).

In addition, a separate analysis was conducted using principal axis factoring (PAF)¹² with a promax¹³ rotation. Factor loading were at a minimum of .40. Initially seven factors were extracted as with the PCA but the factors varied very slightly. The analysis was re-run for eight factors and the results were virtually identical to the PCA. What is reported here derives from the pattern matrix of the principal axis factoring (see Table 3 for the factor loadings). Some researchers (Fabrigar, et. al., 1999; Gorsuch, 1990; Preacher & MacCallum, 2003) suggest that principal axis factoring with an oblique rotation is the preferred method of factor analysis even if principal component analysis is widely used and explained in many texts (for example, Green & Salkind, 2003).

According to the analysis, the forty-four questions can be summarized in eight dimensions or scales as illustrated in Table 2. The dimensions or scale items were also tested for reliability. Hence, the forty-four items can be summarized in eight dimensions with high reliability.

⁵ Principal components analysis (PCA) is a form of factor analysis. It involves a mathematical procedure that transforms a number of (possibly) correlated variables into a (smaller) number of uncorrelated variables called *principal components*. The first principal component accounts for as much of the variability in the data as possible, and each succeeding component accounts for as much of the remaining variability as possible.

⁶ A *variance maximizing (varimax) rotation* is a method for rotating axes of a plot such that the eigenvectors remain orthogonal (that is uncorrelated) as they are rotated. These rotations are so that the axes are rotated to a position in which the sum of the variances of the loadings is the maximum possible. This type of rotation is called *variance maximizing* because the purpose of the rotation is to maximize the variance (variability) of the factor (the "new" variable), while minimizing the variance around the new variable. It assumes uncorrelated factors.

⁷ It may be argued that a four point scale is not continuous, strictly it is ordinal, and may be considered inappropriate for statistical techniques normally using continuous data, however, in practice ordinal variables are often used in such analyses (Allison, 1999). Factor analysis is very robust and it is not uncommon to use factor analysis with four point scales.

⁸ A scree plot is a plot of the eigenvalue for each factor; generally, a criterion for selection of factors is that all factors are retained with eigenvalues in part of the plot before the values level off.

⁹ An eigenvalue is the standardized variance associated with a particular factor.

¹⁰ A factor loading expresses the correlation of an item with a factor.

¹¹ A general rule of thumb is that factor loadings greater than .30 are considered to be useful. This is just a guideline and may need to be adjusted, for example, as the sample size and the number of variables increase, the criterion may need to be adjusted slightly downward and it may need to be adjusted upward as the number of factors increases (see Hair, et. al., 1998).

¹² Principal axis factoring is another common form of factor analysis. It uses squared multiple correlations as the initial estimates of the communalities. The general factor model asserts that there is common factor plus individual idiosyncrasies. Principal component works only with the common factor, whereas principal axis tries to use both. (Principal component treats the individual elements as part of the error term). In theory developing a model that takes into account more of the sources of variability can be useful. As well, with the SEPS data set it is likely that the factors are correlated. Table 4 provides the factor correlations.

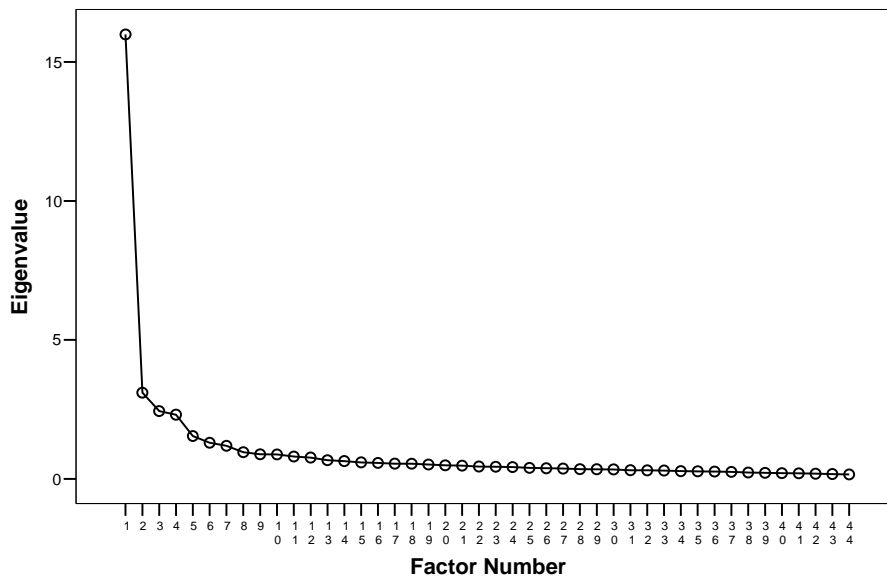
¹³ Promax is an oblique rotation such that the vertices can have any angle. It allows factors to be correlated. Its name derives from procrustean rotation because it tries to fit a target matrix which has a simple structure. With the SEPS data set it is likely that the factors are correlated.

Appendix D - Technical Overview of Analytic Techniques continued

Table 2. Factors (Dimensions) Extracted from the Student Evaluation of Program Survey.

Dimension	Reliability ¹⁴	Number of Items
Program Quality	.814	6
Quality of Orientation	.721	2 ¹⁵
Quality of familiarization to College policies	.892	5
Quality of the welcoming, inclusive college environment	.794	7
Quality of Instruction	.875	4
Quality of program resources	.856	6
Quality of College Facilities	.869	6
Quality of College Services	.902	7

Figure 1. Scree Plot



¹⁴Cronbach's alpha measures how well a set of items (or variables) measures a single unidimensional latent construct. When data have a multidimensional structure, Cronbach's alpha will usually be low. Cronbach's alpha is not a statistical test - it is a coefficient of reliability (or consistency or stability). The acceptable range is between .7 and 1.0 (Nunnally, 1978).

¹⁵Velicer and Fava (1998) argue that factors should have at least three variables, however, if the original variables are best interpreted as a pair and the intent is to develop the underlying dimensions it makes sense to use only two.

Appendix D - Technical Overview of Analytic Techniques continued

Table 3. Summary of Factor Loadings for Promax, Principal Axis Factoring for the Student Evaluation of Program Survey 2003-04. (Note. Only factor loadings greater than .40 are shown.)

	Factor							
	Program Quality	Quality of Orientation	Policy Awareness	College Environment	Instruction	Program Resources	College Facilities	College Services
Q12	.551							
Q13	.574							
Q14	.720							
Q15	.473							
Q16	.672							
Q17	.590							
Q18		.433						
Q19		.447						
Q20			.756					
Q21			.904					
Q22			.922					
Q23			.722					
Q24			.747					
Q25				.768				
Q26				.767				
Q27				.830				
Q28				.425				
Q29				.612				
Q30				.482				
Q31				.418				
Q32					.779			
Q33					.844			
Q34					.682			
Q35					.828			

Appendix D - Technical Overview of Analytic Techniques continued

Table 3. Continued

	Factor							
	Program Quality	Quality of Orientation	Policy Awareness	College Environment	Instruction	Program Resources	College Facilities	College Services
Q36						.677		
Q37						.652		
Q38						.788		
Q39						.821		
Q40						.760		
Q41						.527		
Q42							.658	
Q43							.635	
Q44							.785	
Q45							.723	
Q46							.613	
Q47							.507	
Q48								.571
Q49								.687
Q50								.847
Q51								.729
Q52								.754
Q53								.860
Q54								.818
Q55								.768

Table 4. Factor Correlation Matrix

Factor	1	2	3	4	5	6	7	8
	College Services	Policy Awareness	Program Resources	College Environment	Instruction	Program Quality	College Facilities	Orientation
College Services	1.000	.549	.659	.502	.416	.458	.706	.212
Policy Awareness	.549	1.000	.500	.407	.410	.552	.486	.277
Program Resources	.659	.500	1.000	.467	.518	.561	.692	.232
College Environment	.502	.407	.467	1.000	.402	.382	.443	.263
Instruction	.416	.410	.518	.402	1.000	.623	.469	.221
Program Quality	.458	.552	.561	.382	.623	1.000	.494	.236
College Facilities	.706	.486	.692	.443	.469	.494	1.000	.235
Orientation	.212	.277	.232	.263	.221	.236	.235	1.000

Appendix D - Technical Overview of Analytic Techniques continued

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Research and Planning Department
Red River College
C509 - 2055 Notre Dame Avenue
Winnipeg, MB R3H 0J9
<http://www.rrc.mb.ca/researchplan>