

RESEARCH *brief*

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FOLLOWING-UP WITH FORMER STUDENTS: A SUMMARY OF SEVEN PROGRAM STUDIES

Beginning in the 2000-01 Academic Year, the Los Rios Community College District Office of Institutional Research (IR) began a collaboration with Occupational Education Deans, Area Deans and Faculty from each of the LRCCD colleges to initiate a series of program specific follow-up surveys. In the 2002-03 Academic Year, academic programs providing general education or liberal arts that provide academic programs in support of occupational education or transfer were added, beginning with Biology. All of these studies looked at how well prepared former students are as a result of their Los Rios Community College's coursework. What follows is a summary of the seven program studies that were conducted during the previous two academic years, providing highlights in the following content areas:

- A profile of each program's former students
- An evaluation of coursework taken
- An evaluation of preparation for employment
- KEY THEMES from comments provided

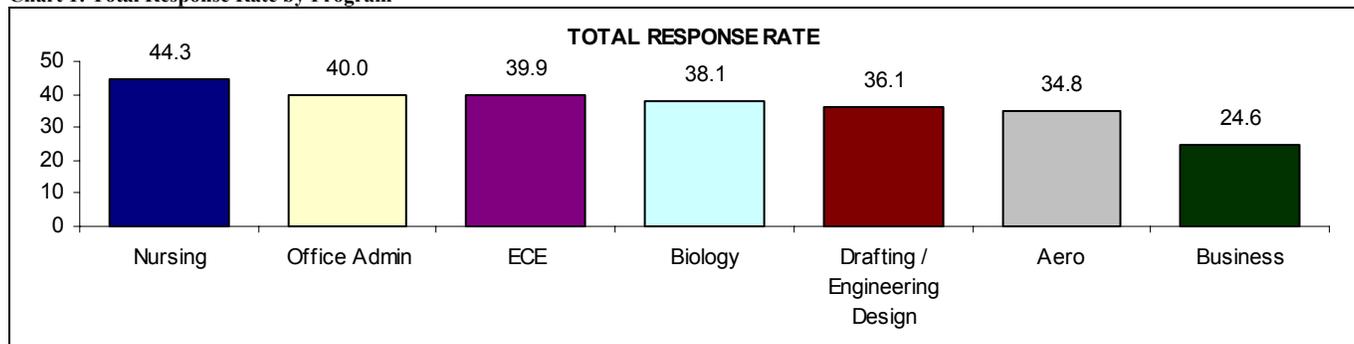
For the more comprehensive reports, please visit the IR website at <http://irweb.losrios.edu> (click on "Feedback from Former Students").

I. A PROFILE OF EACH PROGRAM'S FORMER STUDENTS

FORMER STUDENTS RESPOND

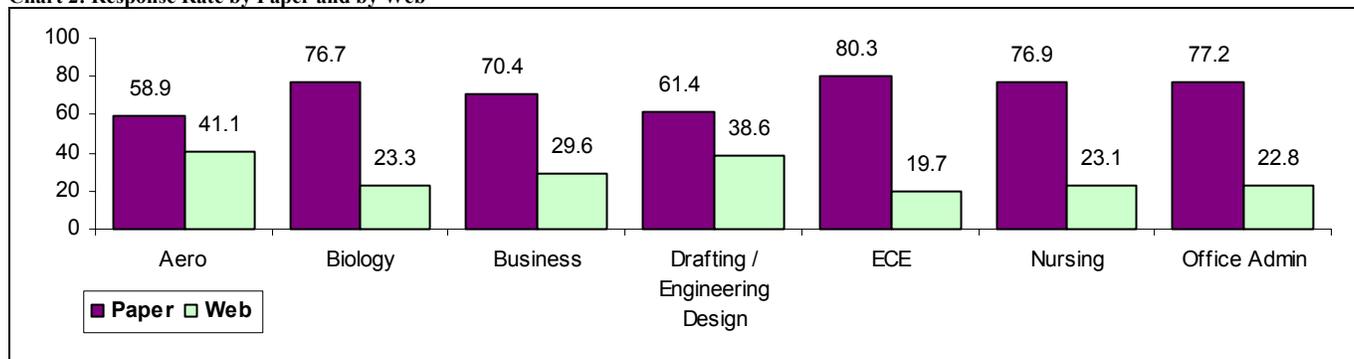
Chart 1 depicts the overall response rates by programs surveyed, ranging from 44.3% for Nursing to a 24.6% response rate for Business.

Chart 1: Total Response Rate by Program



Survey recipients were given the opportunity to take the survey online through the Internet or answer the questions directly on the paper survey form. The following chart illustrates paper versus web response rates by the various programs surveyed.

Chart 2: Response Rate by Paper and by Web



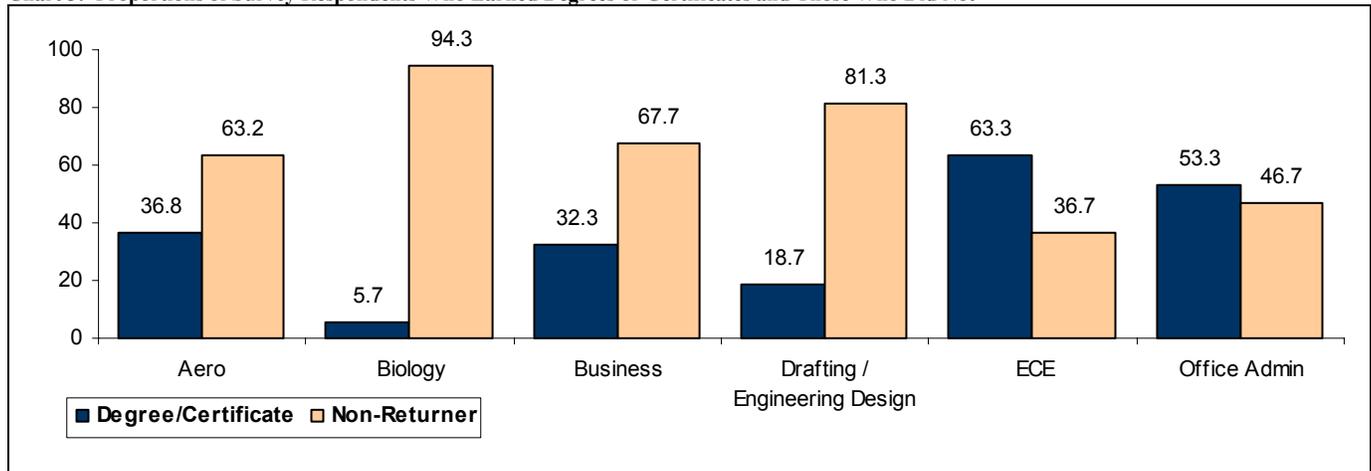
WHO ARE OUR FORMER STUDENTS

The results of the program specific follow-up surveys provide the opportunity to take a look at the profile of our former students to help better understand and serve our students at the program level. For example, high proportions of former Biology (94.3%), Drafting (81.3%), Business (67.7%) and Aeronautics (63.2%) students who responded were non-returning students, rather than degree or certificate earners.

In Biology in particular, the high proportion of non-returning students responding to the survey is reflective of a student population taking our Biology courses to prepare them for future educational goals, whether it be to transfer to a four-year university or college or preparation for an Allied Health program. Biology respondents tend to reflect a younger population (68.9% are under 30), the majority with an educational goal to transfer to a four-year college or university (58.8%) and almost one-third have an interest in pursuing a health related program.

In contrast, the Drafting and Engineering Design Technology program appeals to an older student population (64.5% of respondents are over 30) who are probably juggling school, family and careers. The higher proportions of non-returning students in Drafting and Engineering Design Technology are indicative of a student population that matriculates in this program; many are taking a few select courses (specifically in AutoCAD and Electrical Design/Drafting) to learn or upgrade their skills rather than earn a degree or certificate.

Chart 3: Proportions of Survey Respondents Who Earned Degrees or Certificates and Those Who Did Not



*100.0% of former Nursing students who responded to the survey earned a degree or certificate

Fairly equivalent proportions of those who earned degrees and certificates (53.3%) and non-returning students (46.7%) responded to the survey sent to former Office Administration students; the majority (93.5%) are female and many are 40 years and over (47.8%). Of the respondents who were degree earners, 63.3% earned certificates, while 26.5% earned AA degrees and 10.2% earned AS degrees. Interestingly, respondents receiving more than one award in Office Administration account for more than one third (36.7%) of the students who answered the survey.

Higher proportions of those who responded to the Business follow-up survey were non-returning students (67.7%), many of whom (43.0%) are taking Business courses with the goal to improve current job performance. Of additional interest are the 20.4% of former Business students who indicated their coursework helped them to upgrade their skills as required for a job with the State of California or other public sector employer.

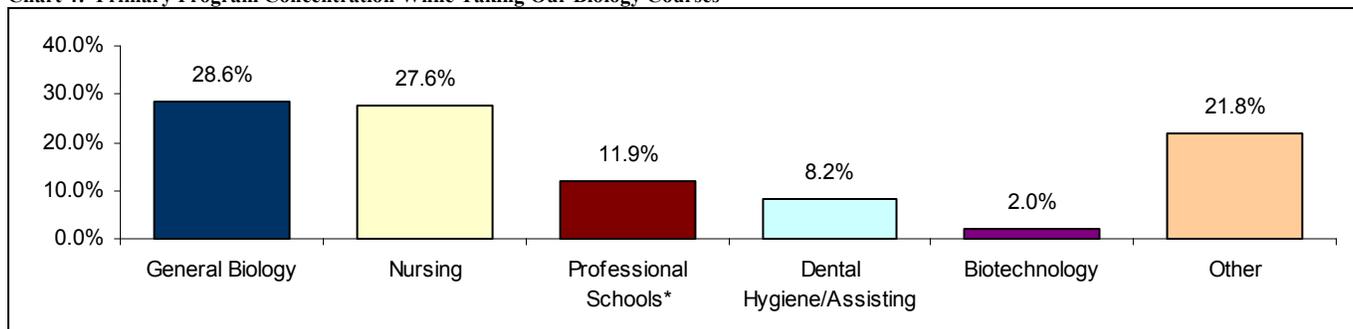
Fairly high proportions of former ECE students are primarily female (99.0%) and, like those in the Office Administration Programs, are reflective of an older student population (43.9% are 40 years and over) and have received a degree or certificate (63.3%).

All former Nursing students who responded to the follow-up survey received a degree or certificate, with 82.3% receiving an RN Degree and 17.7% who received an LVN degree or certificate. Of additional interest are the 34.6% of those who completed the LVN program at SCC, who are currently pursuing or are interested in pursuing an RN program at either ARC or SCC.

PROGRAM CONCENTRATIONS OF FORMER BIOLOGY STUDENTS

The following chart illustrates the flavor of program concentrations of former Biology students district-wide, of interest for future program planning. Higher proportions of respondents indicated their primary program concentration was that of a General Biology focus (28.6%) followed by Nursing program preparation (27.6%).

Chart 4: Primary Program Concentration While Taking Our Biology Courses



*Includes Pre-Medical, Pre-Dental and Pre-Veterinarian schools.

Of additional interest are the 21.8% of respondents who indicated their program concentrations were in areas other than Biology, most of which were related to the biological sciences including Paramedic/EMT, Vet Tech, Medical Assisting, Physical Therapy and Respiratory Therapy.

II. AN EVALUATION OF COURSEWORK TAKEN

COURSEWORK PREPARES FORMER AERONAUTICS STUDENTS

With close to thirty percent (29.5%) of respondents indicating the Aeronautics program helped them improve their overall employability in Aeronautics and 22.1% responding the program helped prepare them to obtain their current job, it is clear that respondents believed their coursework prepared them well for their employment goals. The following table illustrates those Aeronautics courses which thirty-five percent or more of the respondents believed prepared them very well, ranging from 38.4% of respondents from the General Airframe and Powerplant courses to 35.3% from Airframe Structures course.

Table 1: Aeronautics Courses Where the Majority of Students Believed They Were Very Prepared

Rank	Aeronautics Courses	% Very prepared
1.	General Airframe and Powerplant (AERO 50)	38.4%
2.	General Airframe and Powerplant Lab (AERO 52)	38.4%
3.	Basic Electricity and Electrical Systems (AERO 51)	35.3%
4.	Airframe Structures (AERO 71)	35.3%

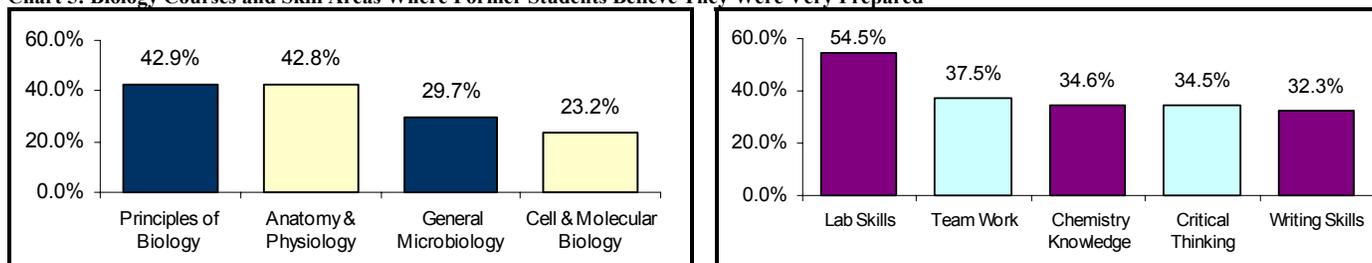
FORMER DRAFTING AND ENGINEERING DESIGN TECHNOLOGY STUDENTS HAVE VERY SPECIFIC COURSE GOALS

As this report previously pointed out, higher proportions of Drafting/Engineering Design Technology survey respondents from each college are non-returning students (81.3%) rather than degree earners, indicative of a student population that takes a few select courses to learn or upgrade particular skills rather than earn a degree or certificate. High proportions of students take courses only in areas of AutoCAD and Electrical Design/Drafting. Of these, high proportions believed they were very prepared as a result of taking Introductory CAD (41.4%) while 29.0% believed they were very prepared. In addition, 38.6% believed they were adequately prepared as a result of their Intermediate AutoCAD coursework. While 42.1% of respondents indicated Advanced CAD did not apply to their course of study, 14.3% of respondents did believe they were very prepared while 25.6% felt they were adequately prepared as a result of taking the course. Of those who responded to how well their Electrical Design/Drafting prepared them for employment, 85.2% indicated they were adequately prepared by this course.

BIOLOGY: PREPARATION FOR FUTURE GOALS

Most respondents to the Biology Follow-up Survey are non-returning students (94.3%) rather than degree or certificate earners (5.7%) reflecting a student population preparing to transfer to a four-year university or college or for an Allied Health program. Across all biology courses offered at Los Rios colleges, students feel adequately or very prepared for their future education and employment goals and extremely low proportions state they were not prepared for their education and career goals by taking their courses. Chart 5 illustrates those courses that respondents believe prepared them very well, ranging from the 42.9% of respondents who feel very prepared as a result of taking General Biology to the 23.2% who fell very prepared from Cell and Molecular Biology courses.

Chart 5: Biology Courses and Skill Areas Where Former Students Believe They Were Very Prepared



Survey recipients were also asked to evaluate how prepared they were in a series of skill sets related to Biology as a result of taking our courses and the chart highlights those skill areas where over 30.0% of respondents felt they were very prepared. Over half, 54.5%, felt they were very prepared for laboratory skills as a result of taking our Biology courses.

Clearly, transfer to a four-year college or university is the goal of many former Biology students, with 58.8% indicating so. As such, it is important to understand how well prepared students were for specific coursework at their 4-year college or university. The following table illustrates those upper division university courses that respondents believe they were very well prepared for as a result of taking Biology courses at a Los Rios college, ranging from the 26.1% of respondents very prepared for Anatomy and Physiology to the 11.7% of respondents very prepared for Molecular Biology.

Table 2: Courses at 4-Year College or University Where Former Biology Students Are Very Prepared for as a Result of Taking Our Community College Biology Courses

Rank	4-Year College or University Course	% Very Prepared
1.	Anatomy and Physiology	26.1%
2.	Microbiology	18.3%
3.	Cell Biology	17.8%
4.	Genetics	12.4%
5.	Molecular Biology	11.7%

NURSING SKILL AREAS: LEVELS OF PREPAREDNESS

Of the former nursing students who responded to the survey, 99.3% are currently working in the Healthcare field, hence it is especially important that our courses are preparing students for employment. Over half, 54.3%, of respondents believed that their understanding of the nursing process as a result of our Nursing programs prepared them very well for employment. However, 30.8% of respondents believed they were not prepared in IV Therapy skills. Table 3 demonstrates those skill areas where high proportions of respondents were very prepared and also those where 10% or more believed they were not prepared by our Nursing program.

Table 3: Nursing Skill Areas Where Students Believed They Were Very Prepared and Where They Believed They Were Not Prepared

Rank	Nursing Skills	% Very prepared	Rank	Nursing Skills	% Not Prepared
1.	Understanding of Nursing Skills	53.4%	1.	IV Therapy Skills	30.8%
2.	Patient Assessment Skills	52.1%	2.	Ability to Supervise Staff	29.0%
3.	Competency with Nursing Skills	47.9%	3.	Conflict Management	19.9%
4.	Communication Skills	45.5%	4.	Ability to Delegate	11.6%
5.	Ability to Work in a Team	45.2%			

EARLY CHILDHOOD EDUCATION (ECE) STUDENTS - - VERY PREPARED IN ECE RELATED SKILL AREAS

Over half of ECE respondents, 61.8%, believed their ability to work with other teachers in a team environment was a result of strong preparation from our ECE programs. In addition, for eight of the other ECE skill areas on the survey, the majority of respondents believed their ECE courses also prepared them very well, ranging from the 58.7% who believed they were very prepared to set-up an ECE program environment to the 51.9% who were very prepared to understand the education requirements for different types of childcare jobs. There were two areas, however, where respondents believed they were not prepared, as a result of our ECE courses: 24.7% believed they were not prepared to work with children with special needs and 12.7% believed they were not prepared to supervise staff.

BUSINESS STUDENTS WORK IN FIELD OF STUDY

Many former Business students already work in the business field; 68.0% indicated so. It is, therefore, important that course content areas prepare Business students for employment, in addition to preparation for further education. General Business course content areas that respondents believed prepared them adequately or very well for employment include the understanding of: economic environments in which businesses operate (80.2%), the functional areas of business operations (79.6%), and the social environments in which businesses operate (76.7%).

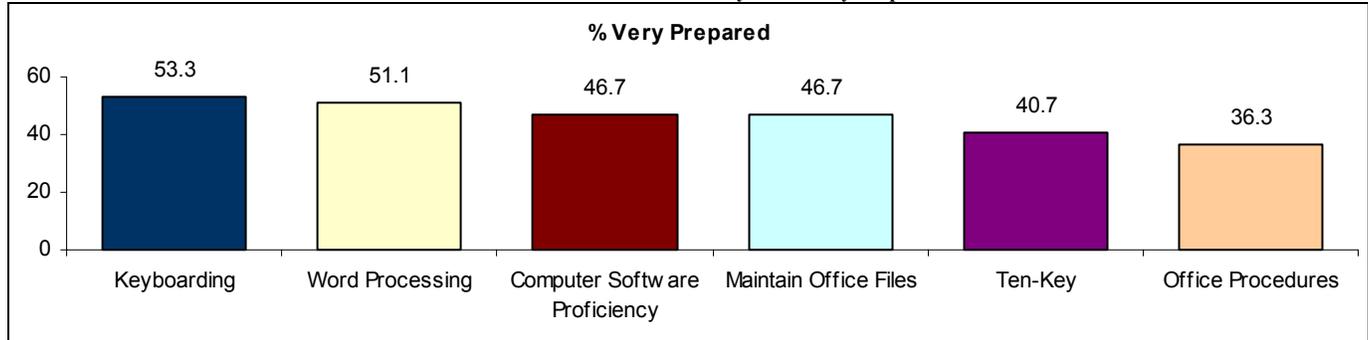
Former Business students with a Management focus believed that the following courses prepared them adequately or very well for employment include the ability to: solve management problems (60.6%), apply management functions to business situations (58.8%), apply principles of time management (58.8%) and apply organizational design essentials (communication, employee relations, planning and resource allocation) to achieve goals (58.5%).

Although there were no skill areas where approximately 20% of respondents felt they were very prepared as a result of courses in Marketing, Real Estate and Small Business Management, there were substantial proportions of respondents who did feel their courses in these areas prepared them adequately for their employment goals. There were some areas within Small Business Management where 15.0% or more students believed they were not prepared as a result of their courses. More respondents felt they did not have an understanding of the legal requirements and government regulations as they apply to the small business environment (20.7%) as well as believing they were not prepared to write a comprehensive business plan (17.9%) or to evaluate financial reports (15.7%).

OFFICE ADMINISTRATION SKILL AREAS ARE STRONG AS A RESULT OF LOS RIOS COURSEWORK

Former Office Administration students were asked a series of questions pertaining to office administration skills and how well prepared they believed they were as a result of their courses for these skills. Chart 6 demonstrates the skill areas where at least 35.0% of respondents believed they were very prepared, as a result of taking our courses, ranging from 53.3% of respondents who believed their keyboarding courses prepared them very well to 36.3% of respondents who believed they were very prepared in general office procedures.

Chart 6: Office Administration Skill Areas Were Former Students Believed They Were Very Prepared



Worth noting are the 33.8% of respondents who had to take a keyboarding test as a condition of their employment. The average keystroke per minute for those respondents who provided this information was 52.8 keystrokes per minute.

III. EMPLOYMENT GOALS OF FORMER STUDENTS

Survey results in Table 4 illustrate that employment goals of former students vary by program. Almost eighty percent (78.2%) of former Nursing students indicated their courses helped them *obtain* their current job while over half (51.4%) of former ECE students responded their coursework helped them *improve* their job performance in their current job. High proportions, 68.0%, of Business respondents indicated they are currently working in the Business field and 38.1% indicated coursework helped them advance in their current job or upgrade skills as required for their job with the State of California or other public sector employer. Many former Biology students, 26.7%, indicated employment goal was not applicable, as many had a goal to transfer or continue their studies in an Allied Health related field, however 20.9% of respondents indicated their Biology courses helped them to obtain their current job.

Table 4: How Did Program of Study Coursework Prepare You For Your Employment Goals*?

Program	Obtain Current Job	Improve Job Performance	Advance / Upgrade for Current Job	Not Employed	Other
Aeronautics	22.1%	18.9%	14.7%	21.1%	28.4%
Biology	20.9%	15.5%	14.8%	8.8%	6.1%
Business***	22.6%	43.0%	38.1%**	12.9%	11.8%
ECE	44.9%	51.4%	32.7%	12.2%	16.0%
Drafting/ Engineering Design Technology	24.1%	33.7%	13.3%	14.5%	29.5%
Nursing	78.2%	15.6%	17.0%	1.4%	6.1%
Office Administration	27.2%	30.4%	20.7%	17.4%	12.0%

* Respondents could select multiple responses

**These Business categories were collapsed: advance in current job (17.7%) & skill upgrade for State of CA or other public sector employer (20.4%)

*** 26.7% of Biology respondents selected NA (Not Applicable)

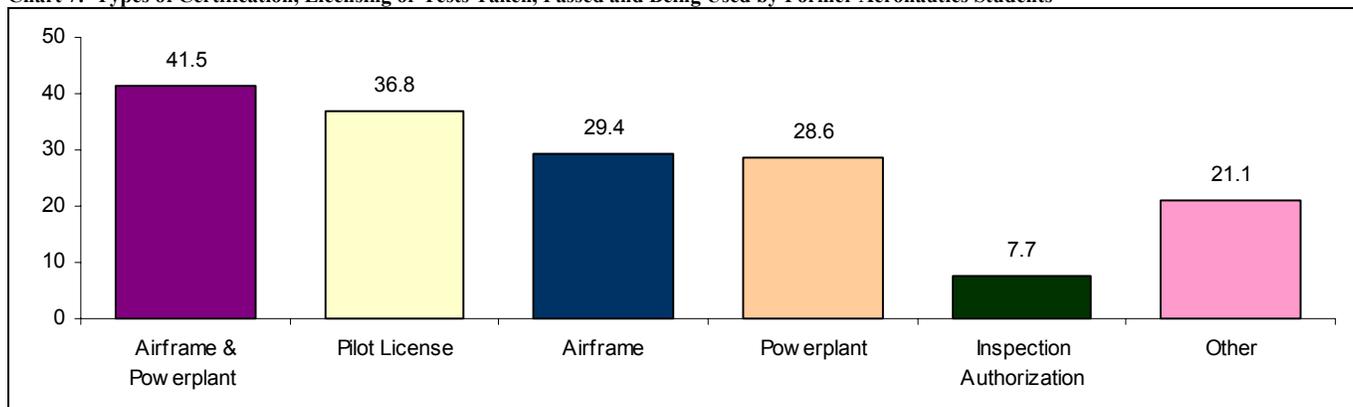
Aeronautics students were asked a series of additional questions and almost thirty percent (29.5%) indicated their Aeronautics courses prepared them in their efforts to improve their overall employability in the Aeronautics field, while 11.6% indicated coursework helped them to improve their employability in a field related to Industrial Mechanics. Of additional interest is the 28.4% who indicated their coursework helped them to prepare for “other” types of goals, more in the nature of personal growth (pilot’s license training or improving ability to maintain or build privately owned airplanes). Likewise, specific to Business, 16.7% of respondents indicated their coursework helped them to open or run their own business.

It is worth noting that those who provided specifics indicated they took Aeronautics courses for personal growth, such as training for their pilot’s license or improving their ability to maintain or build privately owned airplanes. Some of the 29.5% of former Drafting/Engineering Design Technology students who indicated their coursework also prepared them for “other” types of employment provided specific comments that illustrate they took courses to gain AutoCAD knowledge and skills for both career goals as well as personal growth.

CERTIFICATION, LICENSING AND TESTING AS REQUIRED FOR EMPLOYMENT

Some employment fields require prospective employees to take certification and licensing examinations as a condition of employment. Chart 7 demonstrates the proportions of former Aeronautics students who have passed certification and licensing requirements and are currently using them, ranging from 41.5% passing and using Airframe and Powerplant exam to the 7.7% who passed and are using the Inspection Authorization certification.

Chart 7: Types of Certification, Licensing or Tests Taken, Passed and Being Used by Former Aeronautics Students



Business respondents were also asked if they took any type of licensing exam and 10.6% indicated they took, passed and are using a Real Estate License while 18.3% indicated they took another type of exam. Of those who provided specific comments, most of these types of exams are related to the Accounting field. One third (33.8%) of former Office Administration students took a keyboarding test as a condition of employment, averaging 52.8 words per minute for those who provide this information.

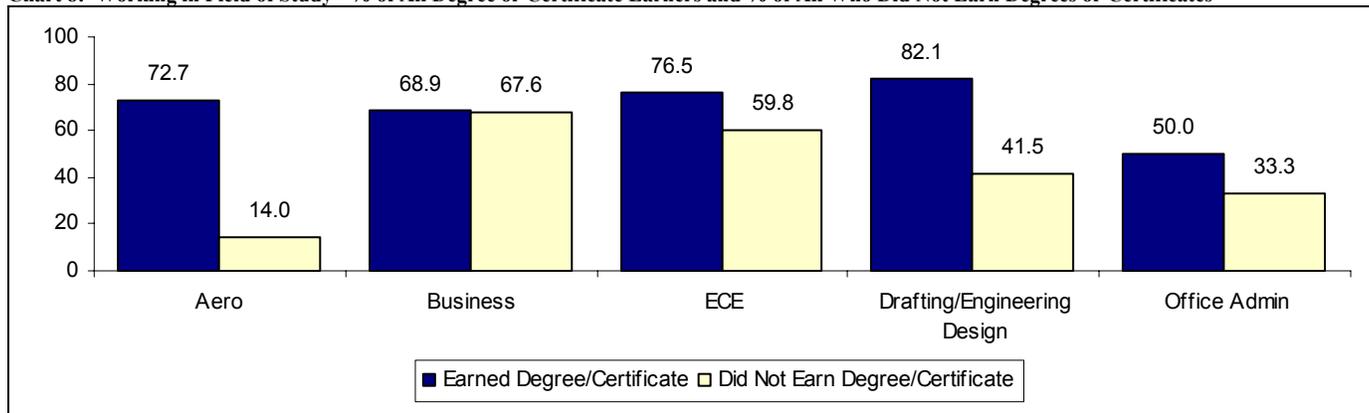
After leaving their Nursing programs at ARC and SCC, 95.8% of respondents from the RN program passed the NCLEX (RN) examination and are using the certification as a condition of employment, completing this examination within an average of 2.6 months of completing their RN program. Of those respondents from the LVN program at SCC who took the NCLEX (LVN) exam, 70.5% indicated they passed the exam within an average of 4.1 months of completing the LVN program.

After leaving our colleges, some former ECE students apply for Child Development Permits as granted by the California commission on Teacher Credentialing. There were 30.9% of former ECE students who met the requirements and are using the “Associate Teacher” permit while 20.6% of respondents met the requirements and are using the “Teacher” permit.

DO OUR STUDENTS WORK IN THEIR FIELD OF STUDY?

Chart 8 demonstrates the varying proportions of those respondents who are working in jobs related to their fields of study by those who earned degrees and certificates and by those who did not. Of those who earned an Aeronautics degree or certificate, 72.7% are working in the Aeronautics field compared to the 14.0% of non-degree earners.

Chart 8: Working in Field of Study - % of All Degree or Certificate Earners and % of All Who Did Not Earn Degrees or Certificates



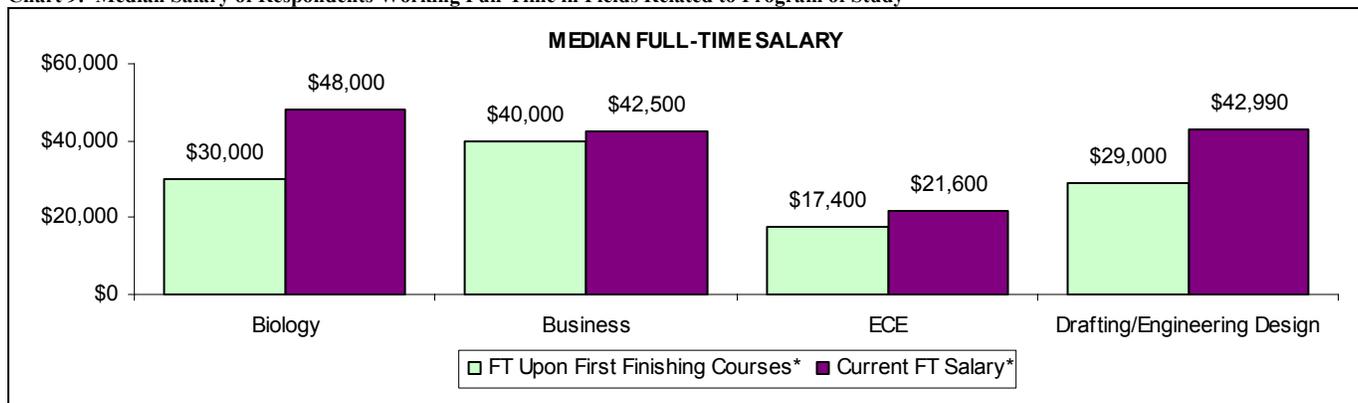
***100.0% of former Nursing students who responded to the survey earned a degree or certificate; of those Nursing respondents who are currently employed 99.3% are working in a Healthcare related field**

Worth noting are the fairly equal proportions of both degree/certificate earners and non-degree earners who are working in the Business industry, 68.9% and 67.6%, respectively. This is indicative of the many students who are working in Business prior to enrolling in Business courses.

SALARY DATA: VALUABLE INFORMATION ABOUT STUDENTS AFTER THEY LEAVE THEIR PROGRAM OF STUDY

Survey respondents were asked a series of questions regarding their salary status if employed currently in their field of study. Median salary information provided by those respondents who are now working full-time in their field of study who provided salary data are illustrated for the programs surveyed. Median salaries for respondents are given based upon when they finished their courses as well as current median salary information.

Chart 9: Median Salary of Respondents Working Full-Time in Fields Related to Program of Study

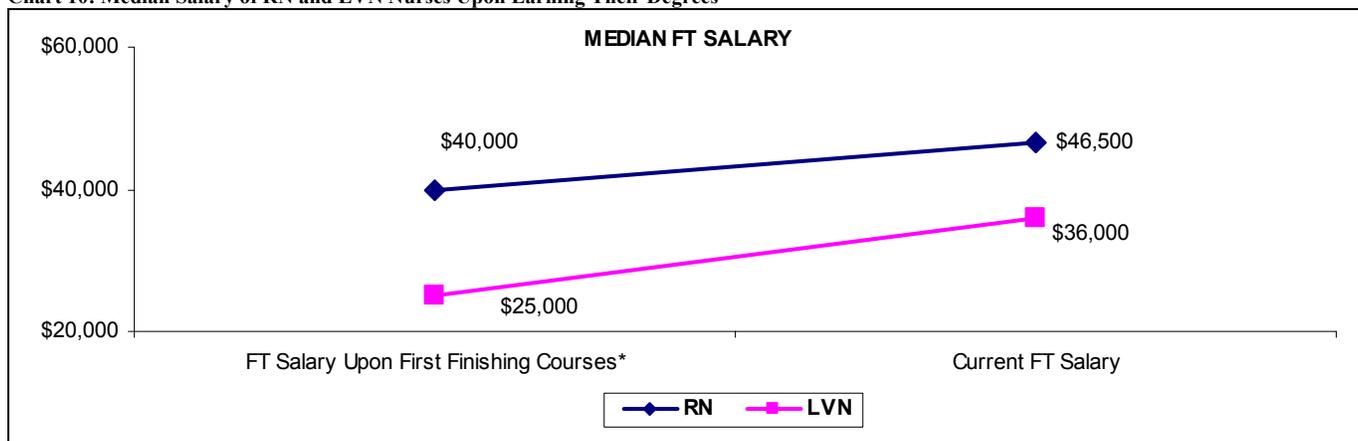


*Based on those respondents working full-time in program of study who provided salary information.

Unfortunately, less than five percent of Aeronautics respondents chose to provide annual salary data, however approximately 15.0% did provide full-time hourly wage data that is informative. Those working full-time in the Aeronautics field at an hourly rate revealed a median hourly wage of \$12.75 that increased to \$19.02 within two years. Less than five percent of Office Administration respondents chose to report salary data, hence any analysis is not valid on such a small data set.

Chart 10 demonstrates the median full-time salaries for both those now working full-time as Registered Nurses as well as those now working full-time as LVN's.

Chart 10: Median Salary of RN and LVN Nurses Upon Earning Their Degrees



*Based on those respondents working full-time in Nursing who provided annual salary data.

THE SELF-EMPLOYED

Tracking the success of those who are self-employed or who are contract employees can be challenging, as their wage information is not included in data provided by the Unemployment Insurance wage data sets. It is interesting to note which programs have higher proportions of former students who are employed within these categories of employment. Similar proportions of former students are self-employed in their own business from the Drafting/Engineering Design Technology program (7.9%), the Aeronautics program (7.3%), the ECE program (7.3%) and from Office Administration (6.5%). Slightly higher proportions (10.5%) of former Business students are self-employed. High proportions, 16.3%, of former Nursing (RN and LVN) students work as contract employees, while 6.1 % of former Aeronautics as well as ECE students are currently working as contract employees.

IV. KEY THEMES FROM COMMENTS PROVIDED BY FORMER STUDENTS

On each program specific survey, former students were provided space to add comments about their courses and programs that they believed would help the colleges to improve programs. Comments were wide ranging and included specific concerns as well as broad commendations for the quality of the student experience. The following represent broad themes that emerged from respondent's comments.

- Former ECE students voiced the need for more classes to train students to work with children with special needs as well more classes to help them work with children from different cultural backgrounds.
- Biology students commented on their appreciation for the small class size and personal attention they received in their courses taught through their Los Rios colleges, especially when compared to their experiences at 4-year institutions.

- Comments from former Nursing students were very positive in regard to the level of preparedness for both their educational and employment goals but some did mention the need for more hands-on experience, especially with IV's.
- High proportions of former Drafting and Engineering and Design Technology students attended their Los Rios college specifically to take courses in AutoCAD and many voiced an interest in taking short (about 9 hours) continuing education course related to the latest version of AutoCAD.
- Former Aeronautics students, both those students who took courses for future educational goals or employment goals as well as those taking courses for personal growth, lamented on the outdated equipment and the need to upgrade. Other students felt their educational experience in Aeronautics would be enhanced with the addition of site visits to local facilities related to Aeronautics or Industrial Mechanics.
- Former Office Administration students indicated an interest in taking short-term (about 9 hours) continuing education courses at a Los Rios College related to refreshing and upgrading computer skills.
- Business students who have transferred were asked to provide their major or program of study at their 4-year institution. Results reveal a wide array of interests within Business, including Finance, Business, Management, Accounting, Marketing, Human Resources and Real Estate. Respondents also continue their education in program concentrations in areas outside of Business, focusing in areas like English, Psychology and Communication.

This **Research brief** was written by Betty Glycer-Culver, Research Analyst. It is based on data generated from the LRCCD Research Database, developed and managed by Minh La, IT Analyst II. For additional copies of this **Research brief**, please contact the IR Administrative Assistant at 916-568-3131 or by email to IR@losrios.edu. Visit our website at <http://irweb.losrios.edu>.

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