



Africa Least Developed Countries Initiative

Independent Impact Assessment

Final Report

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USAID
FROM THE AMERICAN PEOPLE



Submitted by





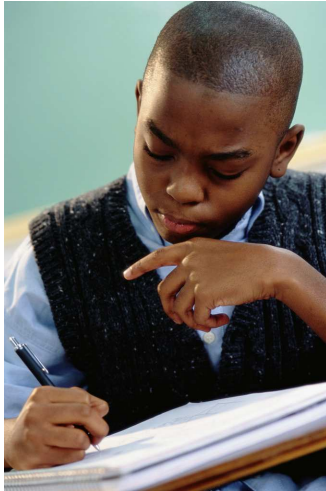
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Background and Objectives

Cisco Networking Academy

The Cisco Networking Academy Program (www.cisco.com/edu/academy) is a comprehensive, e-learning program, which provides students with the Internet technology skills essential in a global economy. The Networking Academy program delivers Web-based content, on-line assessment, student performance tracking, hands-on labs, instructor training and support, and preparation for industry-standard certifications.



Launched in 1997, the program involves more than 500,000 students per year in more than 165 countries. Since inception, over 2 million students have enrolled in Academies in high schools, colleges and universities, technical schools, community-based organizations, and other educational programs around the world.

Partners of the Networking Academy have seen that it can be a powerful development tool, because it employs the Internet and education -- two great equalizers. The Internet is capable of eliminating the time, geographic, socioeconomic, racial and ethnic boundaries that can limit access to education and advancement. E-learning is highly effective in reaching disadvantaged and at-risk communities worldwide. Combining instructor-led, online education with hands-on laboratory exercises, and an industry-standard certification upon graduation, the Networking Academy curriculum prepares students for lifelong opportunities in the real world.

Least Developed Countries Initiative


The Least Developed Countries Initiative began in July 2000, as G-8 leaders met in Okinawa, Japan for the G-8 Summit. In an effort to bridge the digital divide, representatives from Cisco Systems, the United States Agency for International Development (USAID), the United Nations Development Program (UNDP), and the United Nations Volunteer (UNV) program, met to discuss how these organizations could partner. Although Cisco Systems had facilitated three successful years of growth in the Cisco Networking Academy Program in the U.S. and abroad, it had not yet been able to reach the world's least developed countries, which needed additional support and development expertise. Thus marked the beginning of the Least Developed Countries Initiative.

In 2001 further support for the LDC Initiative became available when Cisco joined forces with the International Telecommunication Union (ITU) under the ITU Development Bureau (BDT) Internet Training Centers Initiative (ITCs) for Developing Countries.



In 2001, the partners identified the first 20 LDCs to participate in the initiative. After extensive research, institutions with sufficient infrastructure to host the program (PCs, electricity and internet connectivity) were jointly selected. Cisco donated the curriculum, the e-learning infrastructure, and in many cases the lab equipment. The other partners donated funding for instructor training and provided valuable on-the-ground expertise and support. By the end of the year, 58 Academies were established in a total of 27 countries, which included seven non-LDCs in sub-Saharan Africa – exceeding the initial

targets 6 months ahead of schedule.



In 2003 Cisco Systems, USAID, and UNDP strengthened their alliance and announced the “Africa 100”, Phase II of the LDC Initiative; USAID sponsored 75 new institutions and UNDP agreed to sponsor 25. The goal of Phase II was to broaden the reach of the Academy Program by establishing local academies around the pre-existing regional institutions. These Academies were recruited and established in 2004 and 2005.

Although quality and sustainability had always been emphasized in the Cisco Networking Academy Program, starting in 2004, those topics became the primary focus of the partnership. With the help of the Academies, LDC Initiative partners identified the greatest challenges to sustainability. This led to the creation of the “PLAN-IT for a Sustainable Future” model, a set of 3 toolkits addressing the themes of sustainability, gender, and workforce development. In addition, the Africa Sustainability Roadshow in February 2006 provided Academies with in-depth training on many aspects of Academy sustainability. To address the importance of ongoing instructor quality within the program, an Africa Quality Initiative was introduced in 2006.

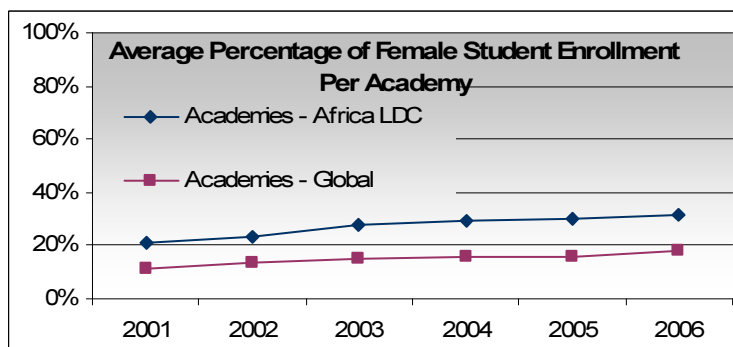
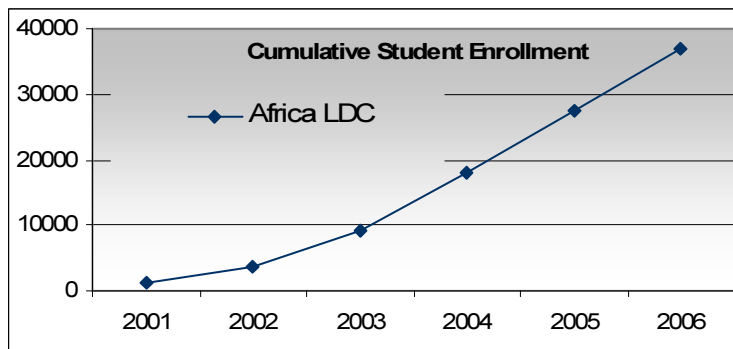
Over the last seven years, the Least Developed Countries (LDC) Initiative has enabled over 50,000 students in the developing world to obtain ICT skills and knowledge. The Internet-based learning and educational opportunities have positively transformed lives and communities, giving people the skills necessary to find employment and make a better life for themselves and their families in the world’s least developed countries.

In addition, due to the success of ITU's involvement in the LDC Initiative, ITU and Cisco also agreed to further expand the program in an effort to strengthen the Internet and networking skills of the staff working within national telecoms. More training centres were opened in Ministries of Communication, and additional courses were added to existing Academies.

In Africa, the LDC Initiative has touched more than 40,000 students in 43 countries. More than 10,000 students have graduated from all four modules of the Cisco Certified Network Associate curriculum in Africa.

Region	Countries	Academies (since 2001)	Cumulative Students (since 2001)	Current Participating Students	Current Participating Instructors	CCNA 4 Graduates (since 2001)
Africa	32 LDCs 11 "Non-LDC status" 43 TOTAL	197	40,700+ (30.1% female)	16,200+ (30.6% Female)	490+ (16.9% Female)	10,800+ (32.3% Female)

Shown below, student enrollment has continued to grow every year of the LDC Initiative at Academies directly funded by the Initiative. Also, since 2004 Africa LDC Initiative Academies have maintained a 30% female enrollment, a goal set in 2001.



Least Developed Countries Initiative Impact Assessment

The LDC Initiative is a compelling example of how business, international organizations, and governments can work together to meet the urgent needs of LDCs, promote digital opportunity and ultimately contribute to the advancement of their countries.

In order to continue and expand this valuable work in the future, an assessment of the progress, and, most importantly, an assessment of the impact of this initiative was in order. What has been accomplished? And what is the impact of these results? What can be learned from the experience of the first seven years to strengthen future partner collaboration? In order to chart a course for the future it was important to understand both the progress and challenges experienced throughout the LDC Initiative.

Therefore, the partners of the LDC Initiative (Cisco, Cisco Learning Institute, ITU, UNDP, USAID) commissioned this study to evaluate the progress of the LDC Initiative in six representative countries (Cameroon, Kenya, Nigeria, Senegal, Uganda, Zambia), to determine the effects of the program on individual stakeholders (former students, instructors, employers, and community leaders), and to use the data collected to make decisions about future initiatives and resource allocation. It was at this time that Cisco Learning Institute (CLI) joined the partnership because of their expertise in measurement and the analysis of data.

For several months, representatives from Cisco, CLI, ITU, UNDP, and ITU met to collaborate on the design and implementation of the LDC Initiative Impact Assessment. During the first stage of this study, partners who were involved with the LDC Initiative were interviewed to determine appropriate definitions and metrics to measure the impact of the program. Next, partners decided on six countries that would be a representative sample with good geographic, cultural, economic, and language distribution. In the later stages of the study, all partners worked together to approve the format of the data and to understand specific results. The resulting study is the product of the partners' collaborative efforts.

Specific Objectives

As mentioned above, definitions and metrics were determined before the impact assessment began. CLI conducted interviews with partners from UNDP, ITU and USAID to establish objectives for the study. CLI also interviewed a small number of instructors teaching at Cisco Networking Academies funded by the LDC Initiative to gain a field perspective, and to ensure objectives were realistic and comprehensive. It was through these initial interviews that the four audiences for the study were determined: students, instructors, employers, and community leaders. In addition, CLI created a lengthy list of specific research questions for each audience. Below is a sampling of questions for each audience developed before the study began:

Student research questions:

What percent of former students are employed?

What types of jobs are former students getting?

Are females achieving equal, less, or greater success than males?

Did the Networking Academy contribute to an increase in former students' self-confidence? Career self-efficacy?

Instructor research questions:

What percent now have a position in IT or Networking in addition to their position as an instructor?

Was there an impact of the program on instructors' quality of life?

Community Leader research questions:

Are former students encouraging others to pursue education by example?

Are communities losing workforce because students are leaving the community for better opportunities, or have businesses been moving to the community?

Employer research questions:

Will employers continue to hire Networking Academy students?

Has business grown or changed because of hiring Networking Academy students?

Advances in use of technology? Business more efficient?

Did the technical skills of Networking Academy students match employer needs?

Definitions

Students –The student population includes all former students (dating from 2001) of LDC Initiative Academies in the targeted countries who had completed a course at least four months prior to the date survey invitations were sent and who had not enrolled in another course. The sampling frame of former students contacted for participation included only those for whom e-mail addresses were available and who had given legal permission to be contacted for participation in surveys.

Instructors – The population of instructors included all individuals currently teaching Academy courses at Academies in the targeted countries. Only those instructors who had given legal permission to be contacted for participation in surveys were invited to participate in the study.

Community Leaders – For this study, community leaders includes local and regional government officials, business leaders, and leaders of social, civic, education, and religious organizations who reside in cities where Academies are operated. Respondents represent a broad cross-section of leaders including members of parliament, local politicians, pastors of Christian churches, an Islamic leader, small business owners, university chancellors and professors, newspaper journalists, IT and networking officers, and youth program administrators. All community leader respondents had to be at least somewhat familiar with the Cisco Networking Academy Program.

Employers - Includes individuals from private and public organizations who have hired or managed current and/or former Cisco Networking Academy students in IT-related positions between 2004 to the present.

Methodology

The scope of the research includes collecting information from all four target audiences in the six African countries (Cameroon, Kenya, Nigeria, Senegal, Uganda, and Zambia). CLI worked closely with partners to understand varied definitions of “impact” and communicated feedback to GCR to develop appropriate questionnaires for each audience (former students, employers, instructors, and community leaders), with versions available in both French and English in Cameroon and Senegal. The data collection method varied to most effectively reach each audience. Students and instructors completed Web surveys, employers provided information in telephone interviews, and community leaders were interviewed face-to-face.

One of the most challenging aspects of this research was identifying potential respondents within each audience and obtaining contact information for these individuals. Lists containing names and e-mail addresses were provided for instructors and former students in the targeted countries who had E-mail addresses. Employers and community leaders were recruited from personal referrals and other secondary sources. The Table on the next page shows the total number of respondents who participated in the study for each of the targeted audiences; the “margin of error” provides a statistical estimate of how closely the sample results match the “true” population values. Given their sample sizes, student-reported statistics are highly accurate, instructor-reported statistics a little less so.

Countries, Data Collection Methodology and Sample Sizes

Audience	Methodology	Cameroon	Kenya	Nigeria	Senegal	Uganda	Zambia	Total	Margin of Error
Former students	Web	43	62	67	34	82	42	330	±5.4%
Instructors	Web	8	18	22	11	17	3	79	±11.0%
Employers	Phone	25	25	26	24	25	25	150	NA
Community Leaders	Face to Face	8	20	11	8	20	10	77	NA
	TOTAL	84	125	126	77	144	80	636	

Methodology

Former Students and Instructors

The student population of interest includes all students in the six countries who have completed a Networking Academy course at least four months prior to the survey and the instructor population includes all individuals who are currently teaching Networking Academy classes in these countries. The sizes of the populations are shown in the Table below, along with the number of former students and instructors with usable contact information who had given permission to be contacted. These individuals were invited to participate in the study. The Table shows the response rates for former students and instructors (the percent who completed the survey from among those who received an e-mail invitation).

- Available e-mail addresses were provided for former students and instructors who had given prior permission to be contacted for participation in survey research.
- E-mail invitations and up to two reminders were sent to these former students and instructors, inviting them to complete a 15-minute Web survey;

Sampling- Population and Available Sample for Former Students and Instructors

Country	Former Students				Instructors			
	Number of Cumulative Students	Students Contacted for Participation	Sample (Number of Responses)	Response Rate (% of those contacted)	Instructors in Population	Instructors Contacted for Participation	Sample (Number of Responses)	Response Rate (% of those contacted)
Cameroon	886	374	43	11%	29	15	8	53%
Kenya	3349	1473	62	4%	138	108	18	17%
Nigeria	2733	1305	67	5%	92	73	22	30%
Senegal	1488	716	34	5%	41	27	11	41%
Uganda	10,706	3958	82	2%	143	117	17	15%
Zambia	629	317	42	13%	22	17	3	18%

Methodology

Number of Cisco Networking Academies Represented in Sample by Country and Education Level

Country	Students		Instructors	
	Number of Academies Represented	%	Number of Academies Represented	%
Cameroon	5	12	5	12
Kenya	10	24	10	24
Nigeria	10	24	8	20
Senegal	7	17	8	20
Uganda	6	14	7	17
Zambia	4	10	3	7
Total	42	100	41	100

Education Level	Students		Instructors	
	Number of Academies Represented	%	Number of Academies Represented	%
Secondary, High School	0	0	2	5
Post-Secondary: 2 to 3 Year, Community College	12	29	11	27
Post-Secondary: 4 Year, University	27	64	23	56
Post-Graduate	3	7	5	12
Total	42	100	41	100

* For a complete list of all Academies represented in the study, please see pages 46-47.

Methodology

Employers and Community Leaders

Non-random sampling techniques were used to generate potential respondents for the employer and community leader segments since no lists of qualified members of these audiences were available.

- Former students and instructors who participated in the study were asked to provide names and contact information for employers and community leaders.
- Partners in the study (Cisco, CLI, UNDP, USAID, and ITU) also provided potential contacts in these segments.
- Additionally, GCR used secondary sources such as internet searches, telephone directories, and business directories to identify major employers and community leaders in cities where the Networking Academy operates.
- Response rate values cannot be computed for these non-random samples, so findings should be considered directional in nature.

Potential employer and community leader respondents were initially contacted by telephone and invited to participate in the study. All employer and community leader respondents interviewed for this study are aware of the Cisco Networking Academy.

- While recruiting employers, at least two-thirds - of those contacted in all countries were aware of the Cisco Networking Academy Program.
- Among community leaders, two-thirds or more of all those contacted in Cameroon, Kenya, Uganda, and Zambia were aware of the Cisco Networking Academy and half of these contacted in Senegal and Nigeria were aware of the program.
- Employers completed a 20-minute telephone interview, while community leaders were interviewed in face-to-face meetings.

Methodology

Weighting

When presenting results for former students or instructors across all countries, data are weighted to reflect the proportion of the total former student population from each country. The weighted sample results provide a more accurate estimate of the program’s overall impact across all students who have completed courses. For example, about half of the population of students who have completed courses are from Uganda (54%), but only twenty-five percent of the respondents in this study come from Uganda, so sample data from Uganda are up-weighted (weight of 2.18).

Sampling — Population and Available Sample for Former Students

	Total Number of Cumulative Students	% of Students	Sample (number of student responses)	% of Sample	Weight
Cameroon	886	4%	43	13%	0.34
Kenya	3349	17%	62	19%	0.90
Nigeria	2733	14%	67	20%	0.68
Senegal	1488	8%	34	10%	0.73
Uganda	10,706	54%	82	25%	2.18
Zambia	629	3%	42	13%	0.25
Total	19,791	100%	330	100%	

No weights are applied when results are shown at the individual country level; when audience data (i.e., former students, instructors, employers, community leaders) are combined, each of the four audiences is given equal weight.

Methodology

Limitations

Certain limitations of this study were due to policies set forth by the Cisco Networking Academy Program to protect the privacy of its students and instructors. This included the ability to contact only students and instructors who gave permission to be contacted for survey participation. Both groups indicate this permission on a profile page they set-up when they first join the program, although they can change their status at any point during their involvement. For former students who are no longer able to access their profile page, permission to contact is based on their most recently saved response. Inquiries into salary and socio-economic status are also impermissible under the Cisco Networking Academy Program's privacy policy.



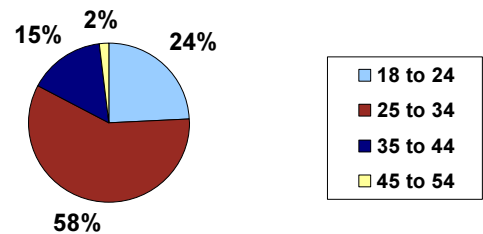
Demographic Profile of Respondents

Students

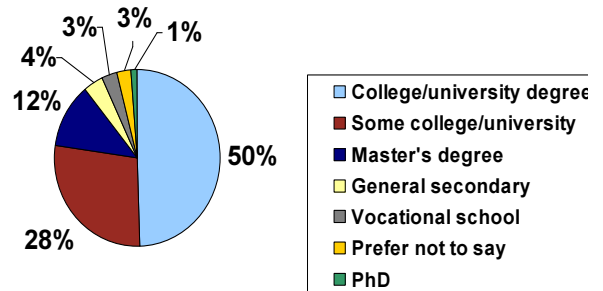
Most of the former students who participated in the study were between 25 and 34 years of age and had attained a college/university degree. Nearly half (48%) of all students were raised in small cities or towns and about eighty percent of all students are male.

Nearly half (43%) report they were full-time students while taking courses at the Networking Academy, while one-third (32%) were working full-time and taking courses part-time.

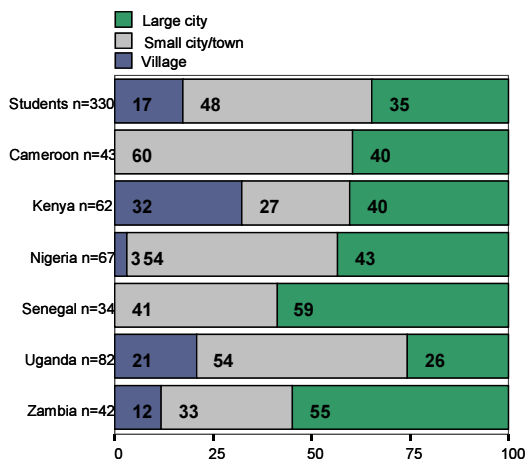
Student Age
n=330



Student Education
n=330



Community Where Students Were Raised

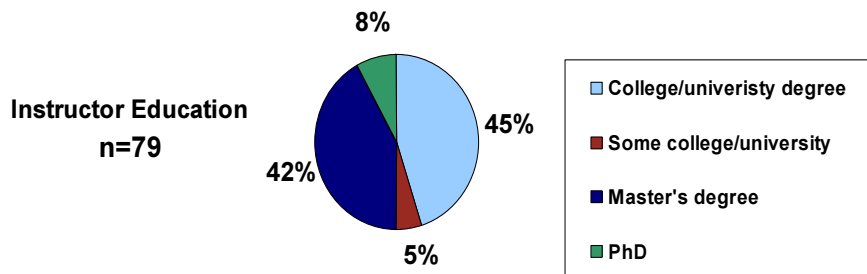
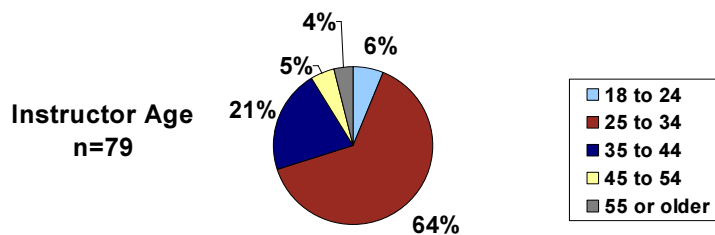


Gender Distribution	Male	Female
Total, n=330	78%	20%
Cameroon, n=43	79%	19%
Kenya, n=62	82%	18%
Nigeria, n=67	91%	9%
Senegal, n=34	79%	21%
Uganda, n=82	73%	24%
Zambia, n=42	90%	5%

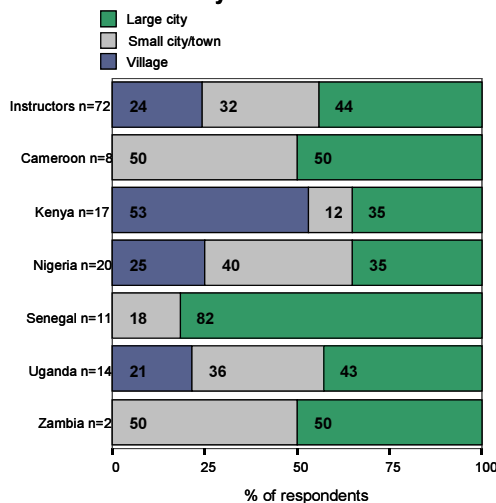
Demographic Profile of Respondents

Instructors

Instructors who participated in the study were predominately male (81%) and nearly two-thirds were between 25 and 34 years of age. Nearly half (42%) of instructors hold a Master's degree, and eight percent have a Ph.D. Over forty percent were raised in large cities.



Community Where Instructors Were Raised



Gender Distribution	Male	Female
Total, n=72	81%	19%
Cameroon, n=8	75%	25%
Kenya, n=17	81%	19%
Nigeria, n=20	80%	20%
Senegal, n=11	91%	9%
Uganda, n=14	79%	21%
Zambia, n=2	100%	0%



Key Findings

The diagram below presents a high-level summary of the impact of the Cisco Networking Academy on individuals, employers, and the communities its serves. Findings are consistent across countries and indicate that the program provides substantial benefits to all audiences.

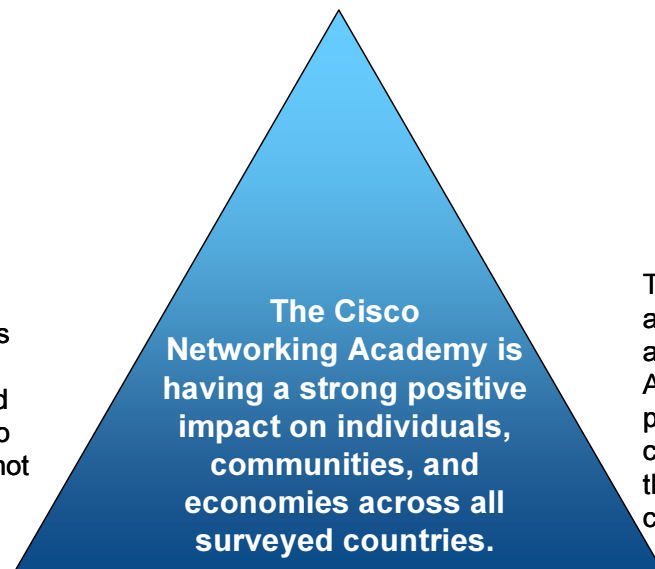
Summary of Program Impact on Individuals, Employers and Community

Technical skills and hands-on experience are cited as the most important outcomes for students after completing courses. These skills build self confidence and increase opportunities for employment. Female former students have greater self confidence and employment opportunities after completing courses.

Individuals

Hiring former students allows companies to better serve their customers and increase productivity. Over three-quarters of employers rate the skills of employees who have completed Networking Academy courses to be superior to those who have not completed these courses.

Employers



The workforce is more educated and possesses higher skill levels as a result of the Networking Academy's presence. Women, in particular, who have completed courses have more opportunities than those who have not taken courses.

Community

Key Findings

Although there are high levels of satisfaction with the Cisco Networking Academy Program across all audiences, opportunities for improvement to the program exist. Top suggestions across audiences include:

Teach more advanced technical skills and emphasize soft skills, particularly communication and project management.

- *"Curriculum should be updated to reflect emerging technologies."*
- *"Focus on job tasks and related tools for accomplishment... management skills are also welcome."*
- *"Focus on job tasks and related tools for accomplishment...management skills are also welcome."*
- *"Develop a mandatory orientation course in soft skills like communication"*

Lower cost of courses.

- *"Reduce the cost of training and change the curriculum to adapt to changing technology."*
- *"Reduce the amount of money the Academy Centers are charging and secure jobs for the graduating students."*

Provide more hands-on experience and access to up-to-date equipment.

- *"The greatest hindrance is the lack of accessibility to switches and routers at our training centers."*
- *"Bring in more state-of-the-art equipment for use."*
- *"More practical application; more hands-on lab time."*
- *"Due to lack of readily available networking equipment, putting in practice what is learned in theory is difficult."*

Increase availability of program in rural areas

- *"Come up with more academies in rural areas."*
- *"More centers with a wider reach."*

Increase assistance with gaining employment, such as internships, communication of job opportunities.

- *"More opportunities for internships with companies."*
- *"Facilitate contacts/partnership between the industry and the academies."*

Key Findings - Students

- Evaluations across all countries are consistently positive, indicating *the standardized model of delivery is achieving its objectives.*
- The program is having a *positive impact* on both male and female students *in terms of career opportunities and self confidence.*
 - All former students report the program improves self-confidence; ratings are higher among women.
 - Community leaders in particular perceive increased career opportunities for female students, however males still dominate the job market.
- Nearly two-thirds of the former students surveyed find employment.
 - Three-quarters of those finding employment have positions that include networking functions.
 - Two-thirds of those finding employment are in the private sector.
- Over ten percent of those who complete Cisco Networking Academy courses start their own business.
- In general, students hired after completing Networking Academy courses have a positive impact on the companies where they work.

Key Findings – Employers & Community Leaders

- Employers hire Networking Academy students for their skills, not to save money or reduce staff. Some employers report hired students may require additional training.
- Most employers who participated in the study are likely to hire additional students in the next two years. Employers plan to continue to hire students with CCNA and CCNP training, as well as all other Cisco certifications. This represents continued opportunity for both students and the Networking Academy.
- A large majority of community leaders say the Networking Academy has a positive impact on their communities by providing training so individuals can secure better jobs and by raising the overall education level of the workforce. Some note, however, that weak economies lead those who complete Cisco Networking Academy classes to leave their home communities to take better jobs elsewhere.
- A strong positive aspect of the program is its availability for students and people who are currently employed; this distinguishes it from “academic” programs designed solely for students.

The following sections of this report quantify the impact of the Cisco Networking Academy Program and provide detailed results for the most important questions addressed by the study.

Overview of Program Impact

The primary goal of this research was to assess the impact of the Cisco Networking Academy from three different perspectives: Individual, Economic, and Community. This impact was examined from the perspective of four different audiences (former students, instructors, employers and community leaders).

A separate data collection instrument was developed for each audience to capture the unique perspective and insights of the audience. The focus of the questions varied as shown below.

✓	Primary focus
✓	Secondary focus

Research Objective	Audience			
	Former Students	Instructors	Employers	Community Leaders
Student Outcomes (Individual)	✓	✓	✓	
Impact on Employers (Economic)	✓	✓	✓	✓
Community Impact (Community)	✓	✓	✓	✓

Overview of Program Impact

To provide an overall evaluation metric of the impact of the Cisco Networking Academy Program, an index score was computed. This impact index is a composite of ratings across audiences and countries for the specific program aspects listed below. The individual impact questions were asked on a 7-point scale, chosen to maximize the discrimination of impact. The impact index has a possible range of values from 1 (low) to 7 (high), with a "4" representing a neutral, or no change, opinion. For each of the three areas (Individual, Economic, Community), audiences were asked several questions about the impact of the Networking Academy; the impact index summarizes these results into a single number, as shown in the bar chart on the next page.

Individual Impact – How well does the program prepare students on:

Rated from "poor" to "excellent":

- Basic technical skills
- Advanced technical skills
- Communication skills
- Project management skills

Economic Impact – Program impact on:

Rated from "strong negative impact," "no change," to "Strong positive impact"

- Skills meet demand of employers
- Quality of local workforce
- Economic strength

Community Impact – Program impact on:

Rated from "strong negative impact," "no change," to "Strong positive impact"

- Standard of living
- Self sufficiency
- Feeling of connection
- Access to online information

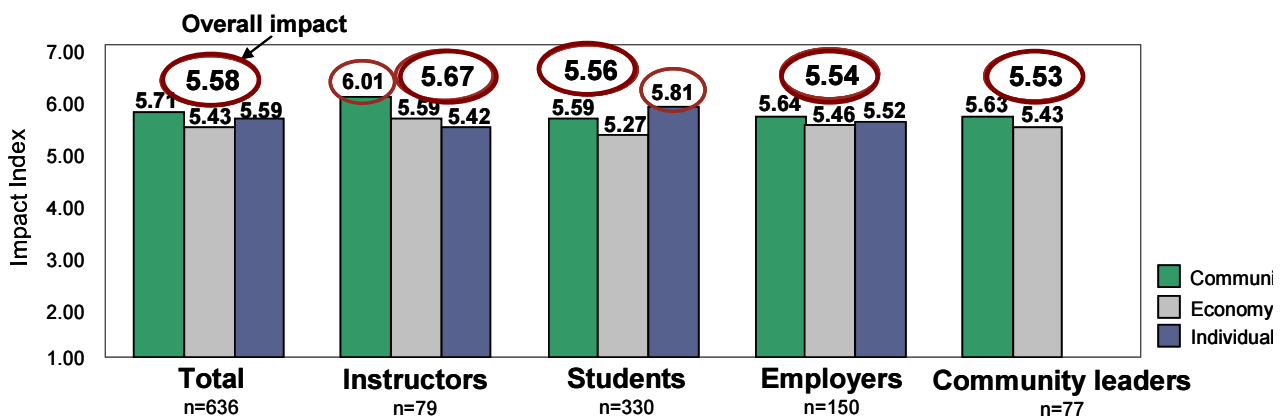
Program Impact – Program Impact Index

As described previously, a composite index score was computed to measure the overall impact of the Cisco Networking Academy on the six African countries in the study. The index score is comprised of impact ratings for the program on individuals, the economy, and community levels. The chart below shows that the overall Impact Index is **5.58** on a scale from 1 (low) to 7 (high). This score indicates that the program has a strong positive impact across all audiences.

A review of the impact scores for each audience reveals very **similar findings** across the four segments, with a range from 5.53 for Community Leaders to 5.67 for Instructors. The program impact indices indicate that:

- Program impact is lower on the economy than on individuals and the community.
- Instructors perceive a higher impact on the community than do all other audiences.
- Instructors perceive a higher impact on the economy than do former students.
- Former students perceive a higher impact on individuals than do either instructors or employers

Program Assessment – Composite Index Score

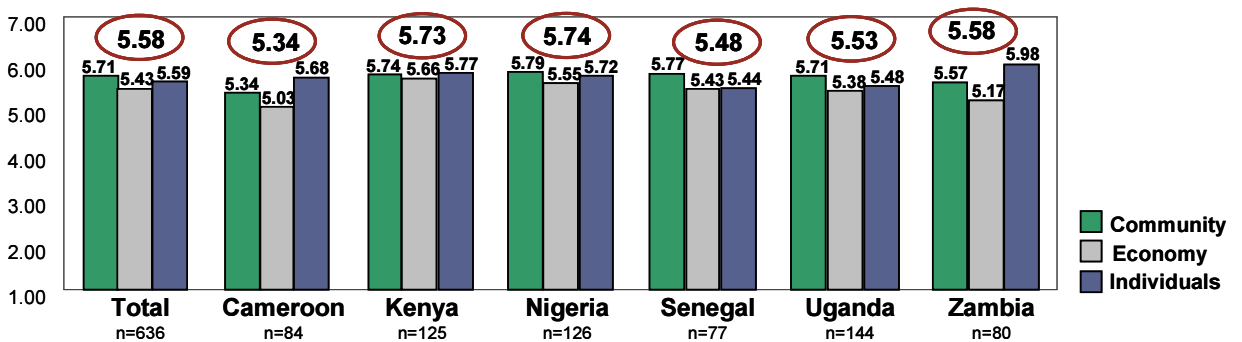


Program Impact – Index Scores by Country

Composite impact scores for each of the six African countries indicate consistent positive evaluations of the Cisco Networking Academy Program. The following comparisons are noteworthy:

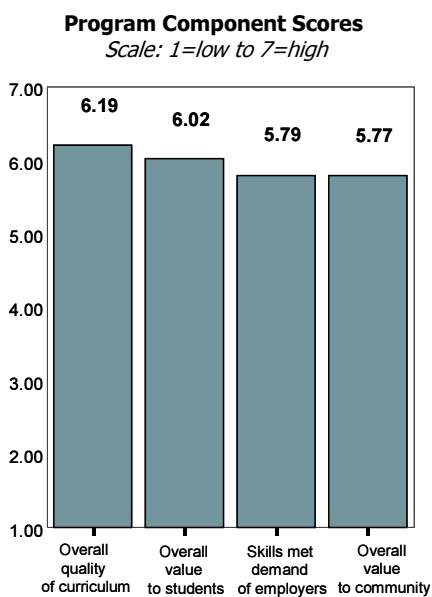
- There are no significant differences in program impact across countries at the community and individual levels.
- In Uganda, community impact is significantly higher than the impact on the economy and on individuals.
- In Zambia, individual impact is significantly higher than the economy impact.

Program Assessment – Composite Index Scores by Country



Program Evaluation – Primary Component Assessment

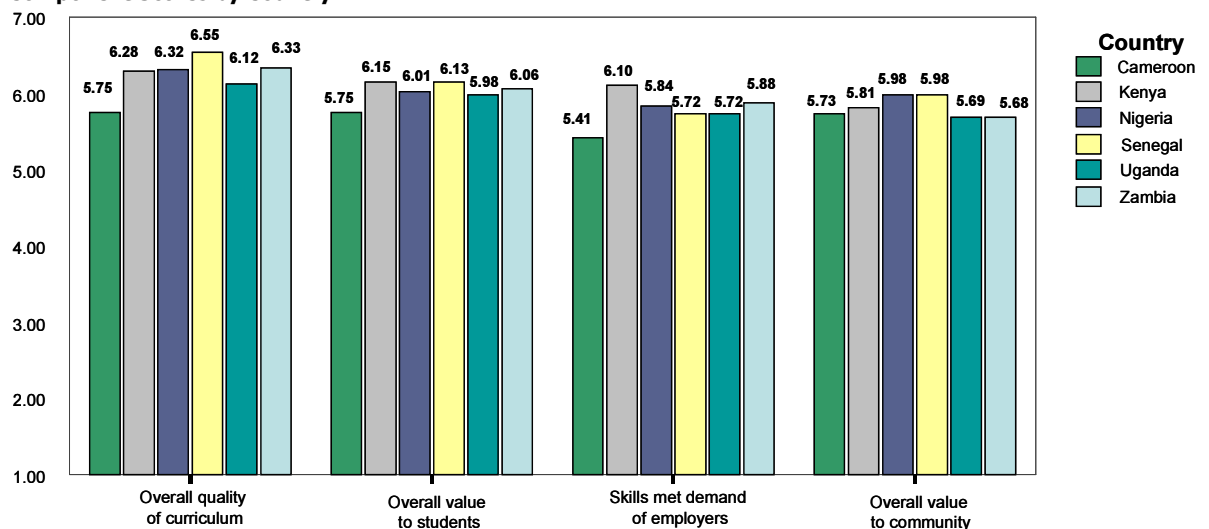
Evaluation scores for the important program outcomes shown below are consistently high, with particularly strong performance on *overall quality of curriculum* and *overall value to students*.



Results not depicted show that women rate *value to students*, *value to the community* and *skills met demand of employers* higher than men do, possibly reflecting the more limited opportunities for women prior to taking courses. Instructor ratings for *skills met demand of employers* are significantly higher than ratings of employers and community leaders.

Ratings by country are presented below and are very consistent across geographies.

Component Scores by Country



Employment – Job Status

After completing courses, most students are employed, with one-fourth starting a new job, another one-fourth returning to the same position, and twelve percent starting a new business. Male students are significantly more likely to start a new business than are female students (16% and 0%, respectively).

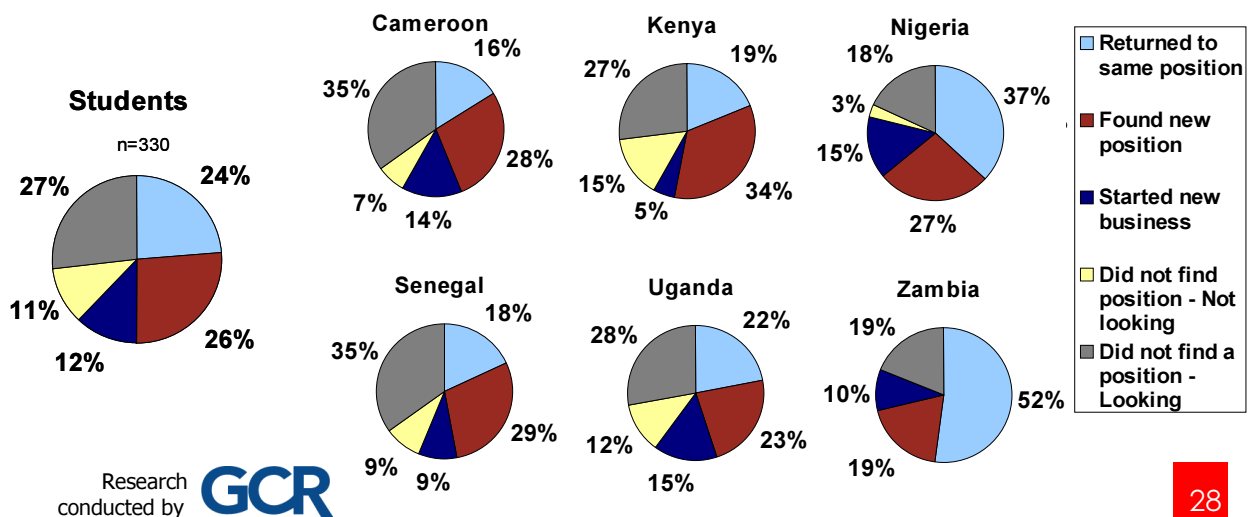
Former students in Zambia are significantly more likely to return to the same position after completing courses, compared to students in Cameroon, Kenya, Senegal or Uganda. At least two-thirds of employed former students across all countries indicate taking Cisco Networking Academy courses increased their opportunities for promotion.

- "I got a raise at work."
- "I have a new position [at work]."
- "I got a job as a Networking Technician."

- "I have failed to get an IT job, even at the school where I teach."
- "I haven't been able to get a better job."

Almost one-third of former students who were looking for work report that they were not able to find a position, largely because of a weak economy. Also, of the students who are unemployed while taking courses, just over one-third find a position immediately after completing courses. This has increased to one-half employed at present.

Job Status Total Students and by Country

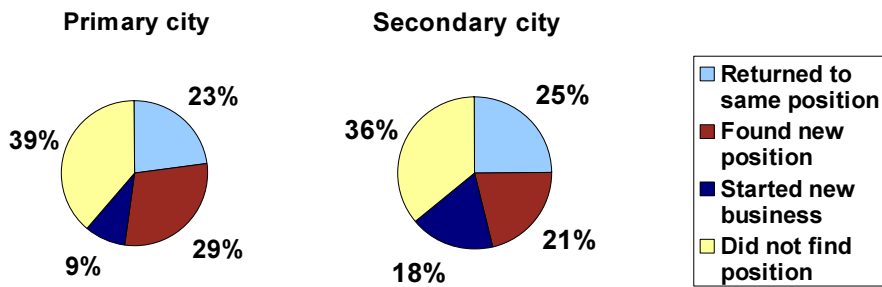




Employment - Job Status

Former students from primary and secondary cities report similar job status outcomes after completing courses, with the exception that students in secondary cities are more likely to start a new business.

Job Status by Primary/Secondary City



**Primary city defined as capital cities and cities with substantially higher populations.*

Results indicate former students most often use campus recruiting (32%), a university job board (25%) and a university department job board (21%) to find their current employer. Employers, on the other hand, typically recruit employees via print advertisements (63%), and through professional recruiters (49%).



Employment – Job Function

After taking courses, two-thirds of the student respondents are employed and nearly three-quarters of these hold positions that include both general IT and networking-related tasks. Male students who have obtained a job report a significantly higher proportion of IT networking positions than females (81% compared to 33%), whereas women are more likely to hold general IT and non-IT positions.

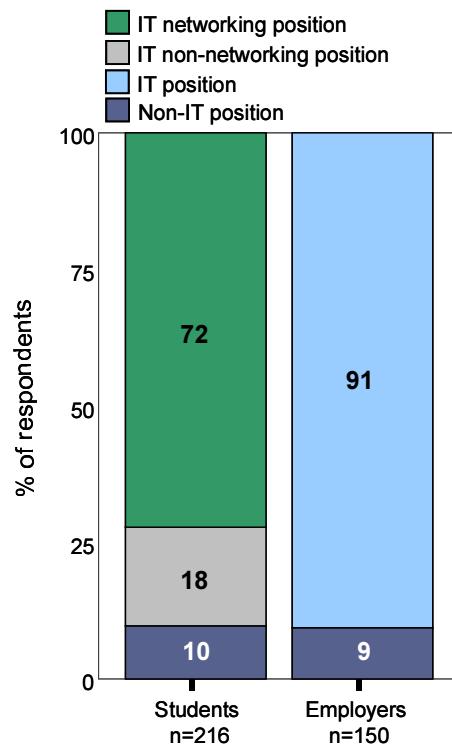
Functional Positions by Gender

	Males	Females	All Former Students
Tasks Performed	n=185	n=27	n=216
Networking	81%	33%	72%
General IT	11%	45%	18%
Non-IT	7%	22%	10%

Results clearly show that employers are hiring Cisco Networking Academy students for their IT-related expertise; only 9% reported hiring students who completed courses to perform for non-IT tasks.

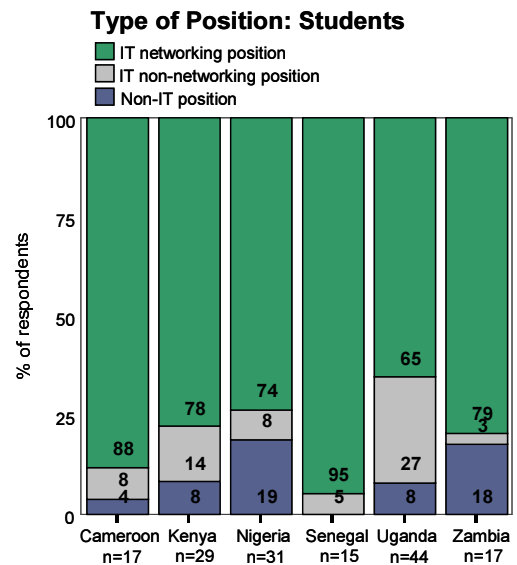
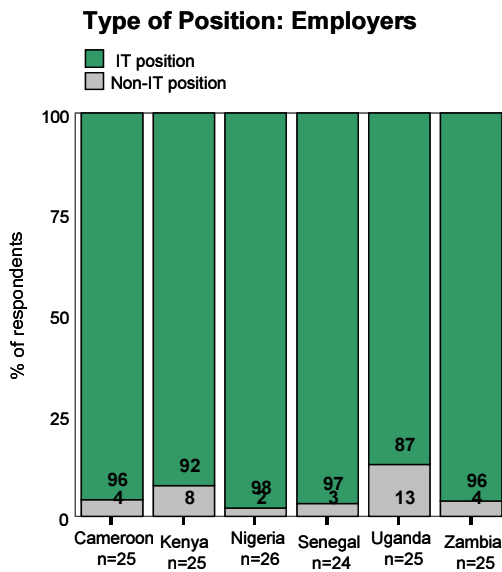
Note: employers were asked only about IT positions versus non-IT positions.

Type of Position



Employment – Job Tasks by Country

As noted previously, just over ninety percent of all employers in the study hire Cisco Networking Academy students for IT-related tasks (includes general IT and networking). No significant differences between countries for employer responses are observed. Similarly, former students report that only a minority are hired for non-IT tasks. Former students in Nigeria and Zambia are more likely to be hired for non-IT tasks. Former students in Uganda are more likely to be hired for IT non-networking positions.



Employment – Job Opportunities and Mobility

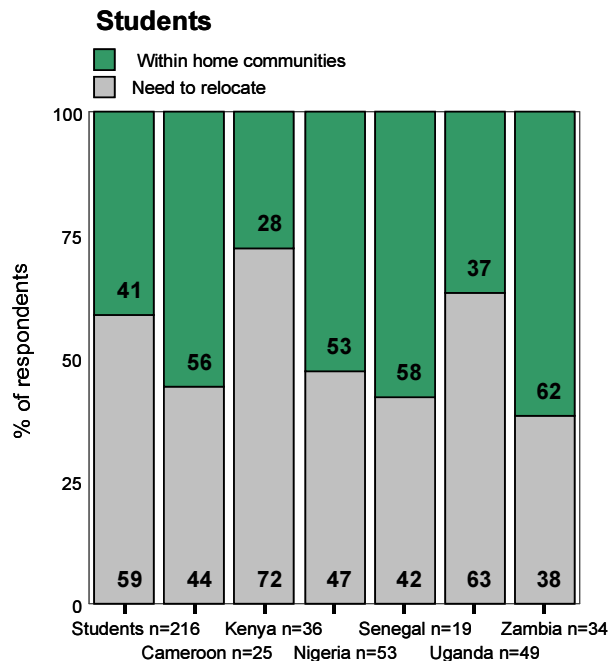
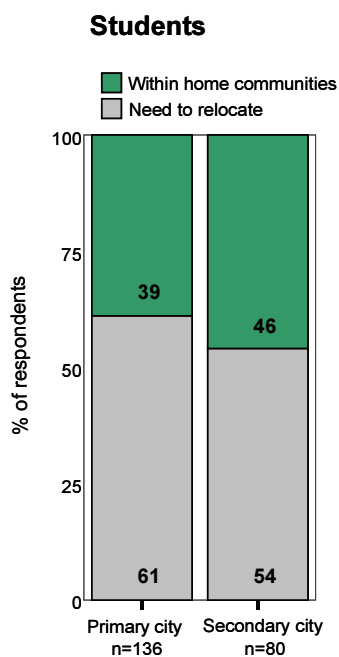
A majority of former students (59%) indicate they take positions outside their home communities after completing Cisco Networking Academy courses. The top reasons for leaving their home communities include:

- Better IT/networking jobs outside their community (27%).
- No available IT/networking jobs in their community (24%).
- No jobs available in their community (22%).

Overall, only a small minority (6%) wish to leave their home communities, but better jobs in their field, higher pay, and more advancement opportunities represent strong incentives for relocating.

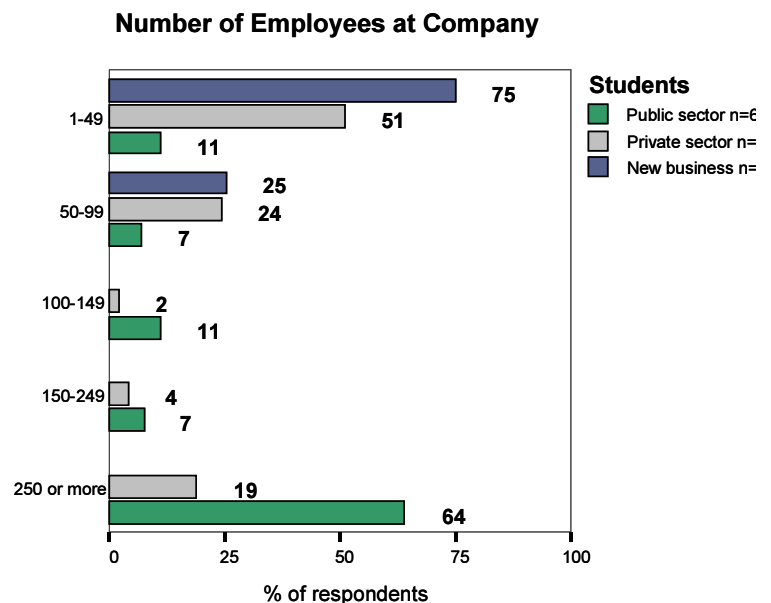
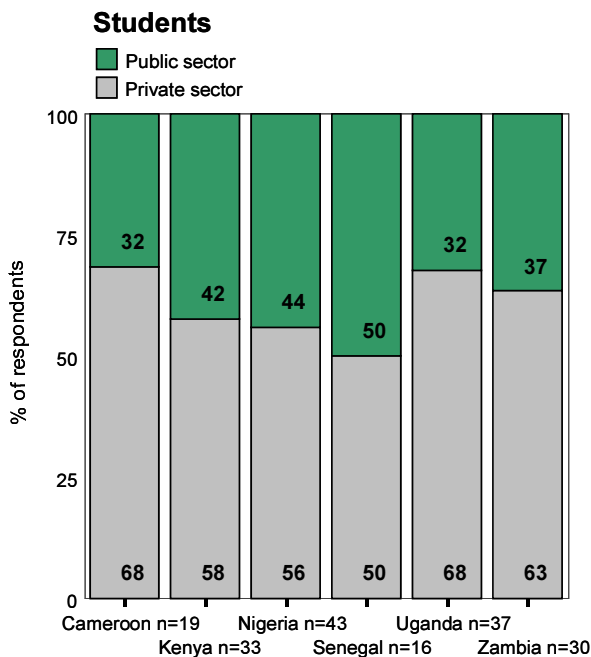
- Former students in Kenya and Uganda are most likely to relocate.

When comparing former students from primary and secondary cities, there is no significant difference in the proportion of individuals who find a position in their home community versus those who relocate.



Employment – Job Sector

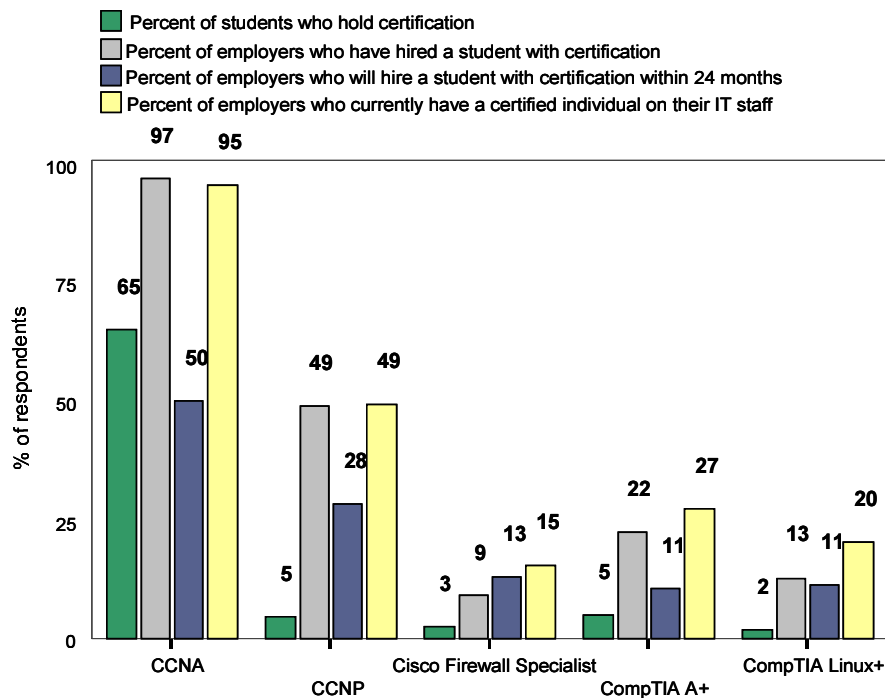
Two-thirds (63%) of former students who found employment at an organization work in the private sector. Top industries where former students report finding employment are technology (41%), business services (15%) and finance (12%). Most former students who find employment in the private sector report being employed at small companies; three-quarters work at a company with less than 100 employees. For those who find employment in the public sector, most (64%) work for public organizations with 250 or more employees. For the small number of former students who start their own business, the majority start small businesses with less than 50 employees (75%).



Employment - Certification

Two-thirds (65%) of responding former students have CCNA certification. Almost all employers (97%) report hiring CCNA-certified former students, and 95 percent of the employers have CCNA-certified employees on staff. Employers are also more likely to have plans to hire students with CCNA and CCNP certifications in the next 24 months. Demand for certified students across all certifications appears strong, indicating future opportunity for Networking Academy students. It should be noted that the high demand for certified students may also include students who have earned *certificates of completion* in these areas. Employers and former students may not have been distinguishing between these two levels when responding.

Certified Students/Employees



Note: The question wording asked specifically for "Certification," but there may be some instances where employers and students interpreted this as "Certificate of Course Completion." Percents shown should be interpreted as directional, not absolutes.

Skills Assessment

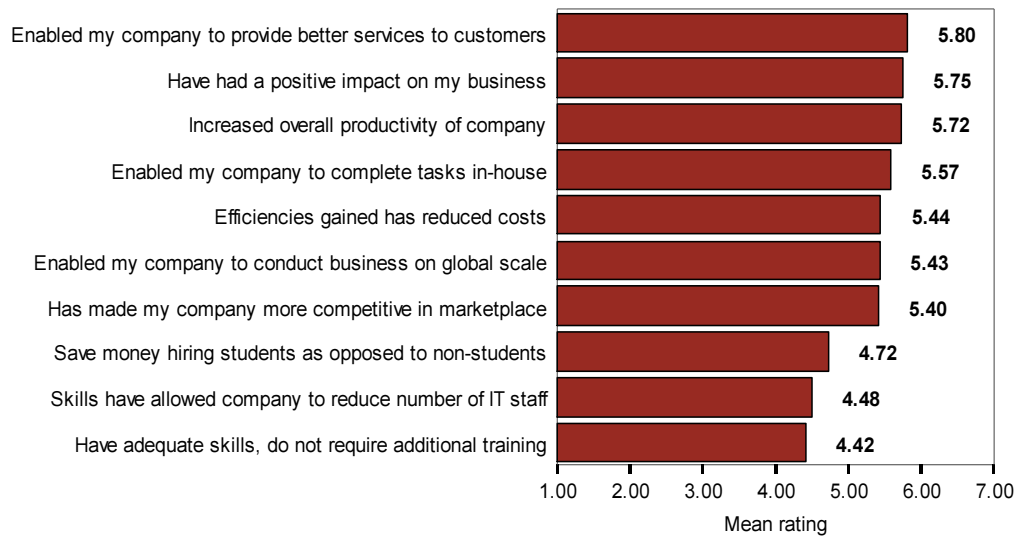
Employer perspective

Employers evaluated the students they hired from the Cisco Networking Academy on the ten attributes shown below. The primary employer benefits of hiring these students include ***the ability to provide better services to customers, an overall positive impact on the business, and increased productivity.*** Employers assign lower ratings to *saving money* and *reducing IT staff* from these hires. Mean scores also suggest that students may often require additional training after being hired for a position. Results show no significant differences in ratings between countries.

Employer Perspective on Students

Employers n=150

Scale: 1=low to 7=high



Skills Assessment – Employer Perspective

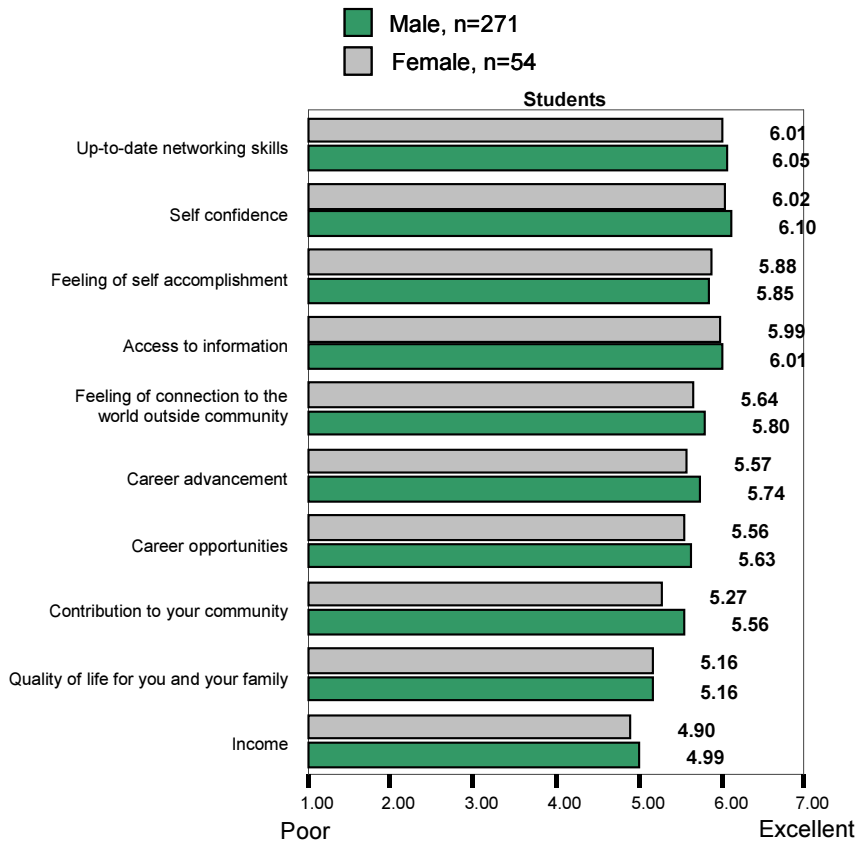
When asked to name the most positive impact from hiring Cisco Networking Academy students, employers often mention that these students bring up-to-date skills to the organization and enhance the organization's ability to compete.

- *"I'm looking forward to a better future as I'm moving forward with the changing technology to improve my business."*
- *"Gain confidence in handling computer systems; they impress the organizations they work for."*
- *[we have] "Confidence in handling networking tasks and have the skills right at our fingertips."*

Skills Assessment – Student Perspective

Former students also evaluated the impact of the Cisco Networking Academy on their lives. The program receives very high marks for providing *up-to-date networking skills* and *building self-confidence*. Responses are similar between males and females, with no statistically significant differences between them for all items rated.

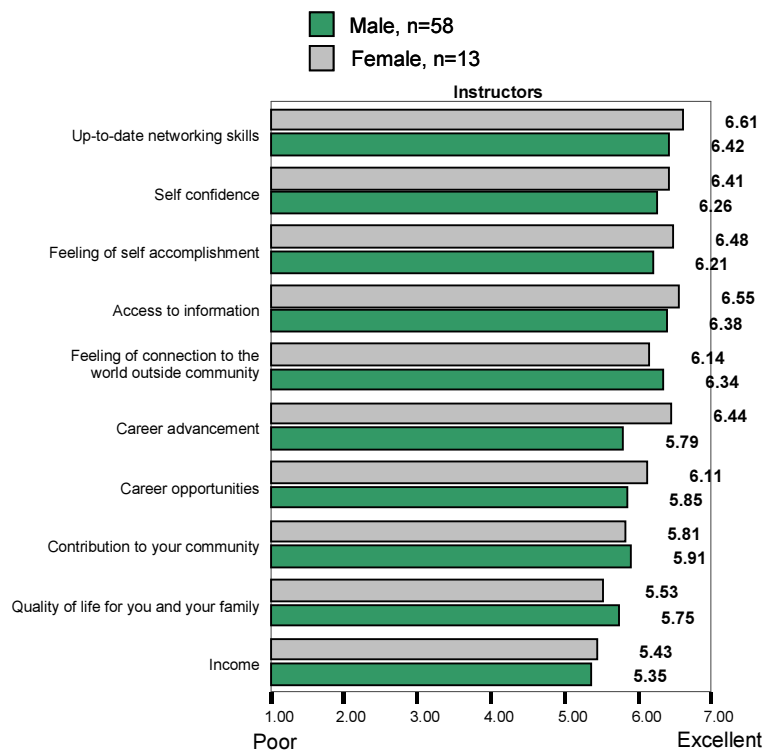
Impact of Networking Academy on Students



Skills Assessment – Instructor Perspective

Instructors also evaluated the program. Ratings are consistently higher than former student ratings on all measures except self confidence and career advancement. On these two items, there is no significant difference between instructor and former student ratings. In general, female instructors give higher ratings when asked about the impact of the Networking Academy on their lives. In particular, females rate career advancement higher than males. For all other items rated, no other statistically significant difference between males and females is evident.

Impact of Networking Academy on Instructors



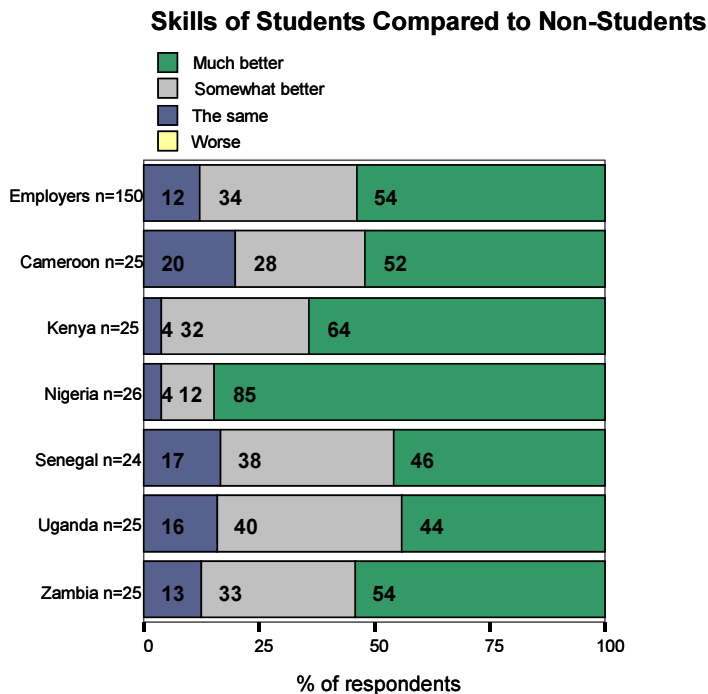


Skills Assessment

A majority (54%) of employers indicate skills of Networking Academy students are much better than those of non-students. When asked at which skills students particularly excel, most employers cite networking skills and configuration planning.

- "Hands-on networking experience puts them ahead of their competitors."
 - "Understand the computer network concept and how to troubleshoot and implement networks."

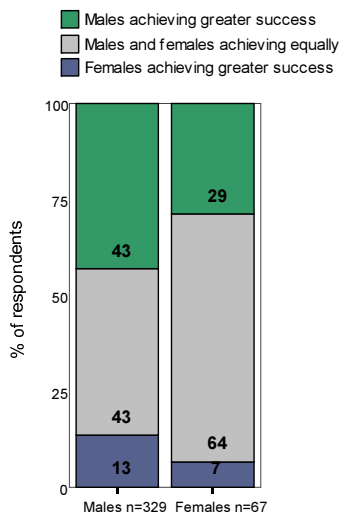
Employers in Nigeria are significantly more likely to say students' skills are much better compared to employers in Uganda. No other significant differences are found.



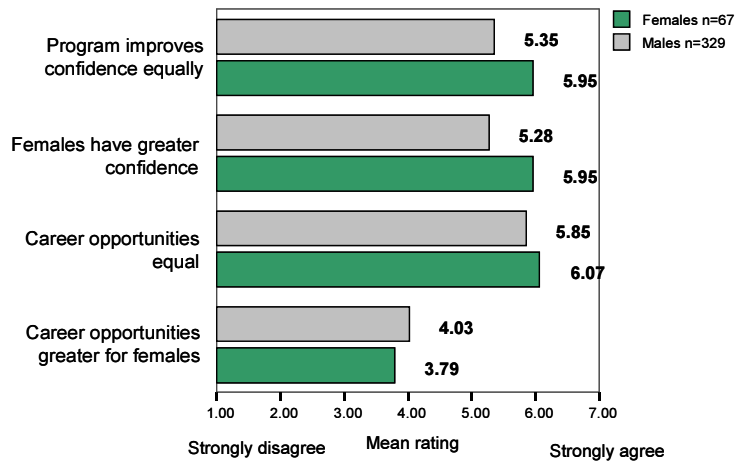
Gender and Success

Females are more likely than males to think that both genders are achieving equal success after attending the Networking Academy; while males are more likely than females to perceive themselves as having greater success as a result of attending the program. Both genders said the program improves career opportunities for all students. However, females are more likely than males to rate the program higher on improving confidence. Females also rate the Program’s impact on individuals as higher than males do. Male and female ratings on the community and the economy are not significantly different.

Success by Gender



Confidence and Career Opportunities



Community Leaders

A total of 77 business, government, education, and social program leaders participated in the study. An overwhelming majority say the Networking Academy has a positive impact on their community. Positive effects include:

- Empowering individuals (students) with increased employment opportunities.
- Increased number of technology experts in the community.

Those who note an impact on their community often state that the program provides opportunities for more people and had raised the education level of the community. Students who have completed Networking Academy courses are in high demand. Students have gone on to obtain good jobs or promotions.

A strong positive aspect of the program is its availability for students and people who are currently employed; this distinguishes it from “academic” programs designed solely for students.




However, while the Networking Academy receives accolades for preparing females for employment opportunities, community leaders point out that males continue to dominate networking job positions.

When community leaders were asked about the role of the LDC Initiative within their countries, few were aware of what this program entails. Most leaders, however, credited Cisco with significantly increasing networks and enabling communication in Africa.




Impact on Community

This final section of the report provides insightful comments on the impact of the Cisco Networking Academy from the broader perspective of community leaders.



1. The Cisco Networking Academy fosters very favorable impressions.

	"Of benefit to the individuals who have gone through the courses at the Academy."
	"Positive, because there is an immense need of this kind of expert."
	"It is a positive impact. We appreciate it so much."

2. The primary impact of the Networking Academy is on individuals and improving career opportunities; fewer leaders cite an impact at the community level.

	"Great impact on the people who have actually gone through it. Definitely the organizations where they are working have also benefited from the skills students acquired there."
	"I think it is positive because it has really helped people who have decided to make IT a profession."
	"It is not easy to assess the impact of this program on the quality of life."



3. Those who do note an impact on their community often state that the program provides opportunities for more people and has raised the education level of the community.

	"By training technical people and upcoming engineers, an all new educated class of people is moving into our community."
	"Before the Cisco academies came up, this training was reserved for the elite. It was not accessible to everybody due to high cost."





Community Leaders —Impact on Students and the Economy


1. Students who have completed Networking Academy courses have an advantage in the job market.

	"The education students receive from Cisco Networking Academy enables them to get better and new jobs."
	"Students get jobs very quickly. Like a hotcake."



2. Community leaders note, however, that given the weak economy in their countries, students who complete Networking Academy courses are not guaranteed a job.

	"They stand a very good chance, but there are no jobs here...we have a lot of educated people, but jobs are not here."
	"[We] don't have enough jobs for networking in particular and they have to work in general IT. And that is why they move to other countries."

3. The program is available to both students and people who are currently employed.




	"The beauty of the program is it equips people who already have jobs; it positions people who do not have jobs to be able to acquire those jobs."
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4. Another suggestion is to lower costs.



	"The cost of the program should be lower so more students can attend."
	"The materials from Cisco are very expensive – all people are not able to purchase them."






5. One of the most-mentioned suggestions for changes to the Networking Academy is more locations, especially in remote areas.

	"Extend the program to remote areas."
	"More centers with a wider reach."
	"This information should be taken further into the country."

6. Many suggest increased marketing of the Networking Academy.

	"More [publicity]. The Academy has been very quiet. I have never seen their billboard anywhere. It is always good to say 'we are Cisco and this is what we offer.'"
	"There is a need to market the program. Very few people know about it. Advertise and push people to join and benefit from the program."

7. Other suggestions relate to making the program more practical and broadening training to teach life/leadership skills

	"I think the Cisco students require more practical knowledge, rather than just theoretical."
	"The module should not end in the class...students should go out a practice a bit."
	"The way they are being assisted in attaining leadership is in the technical side...this program should go beyond the technical aspect."



- Cameroon



- Senegal



- Kenya



- Uganda



- Nigeria



- Zambia



Conclusion

The Cisco Networking Academy is having a strong positive impact on individuals, communities, and economies across all surveyed countries. While there is continued need as not every student finds employment, skills learned at the Cisco Networking Academy help individuals build self-confidence and increase employment opportunities for the majority. Hiring these individuals allows companies to better serve their customers and increase productivity. The workforce in these African countries is more educated and possesses higher skill levels as a result of the Networking Academy's presence.

List of Academies Represented by Former Student Sample

Former Students	Country	Total by Country
ASAFE-Centre de Formation, Douala	Cameroon	5
Institut Africain d'Informatique, Yaounde		
IUT Fotso Victor de l'Université de Dschang, Bandjoun		
Universite de Yaounde I, Yaounde		
University of Buea, Buea		
African Advanced Level Telecommunications Institute, Nairobi	Kenya	10
East African College, Nairobi		
Egerton University, Njoro		
Jomo Kenyatta University of Agriculture & Technology, Nairobi		
Kenya College of Accountancy, Nairobi		
Kenya College of Communication Technology (Town Campus), Nairobi		
Kenya School of Professional Studies, Nairobi		
Loreto College, Msongari, Nairobi		
Maseno University, Kisumu		
Strathmore University, Nairobi		
Abubakar Tafawa Balewa University, Bauchi	Nigeria	10
Ahmadu Bello University, Zaria		
Bayero University, Kano		
Fantsuam Academy, Kafanchan		
Nitda Local Academy, Abuja		
United Nations Development Programme, Lagos		
University of Benin, Benin		
University of Jos, Jos		
University of Maiduguri, Maiduguri		
Usmanu Danfodiyo University, Sokoto		
CEMGY, Dakar	Senegal	7
ESMT, Dakar		
John Fitzgerald Kennedy, Dakar		
Saidou Nourou TALL, Dakar		
UCAD, Dakar		
UGB, Dakar		
Université du Sahel, Dakar		
Islamic University in Uganda, Mbale	Uganda	6
Kampala International University, Kampala		
Makerere University Faculty of Computing and Information Technology, Kampala		
Uganda Christian University, Mukono		
Uganda Institute of Information and Communications Technology, Kampala		
Women and Gender Studies, Kampala		
Copperbelt University, Kitwe	Zambia	4
ICTRF, Lusaka		
NIPA, Lusaka		
University of Zambia, Lusaka		

List of Academies Represented by Instructor Sample

Instructor's Current Academy	Country	Total by Country
AUC, Nanga Eboko	Cameroon	5
CECOF (Centre African Des Competance Feminines), Douala, Cameroon		
Institut Africain d'Informatique, Yaounde		
IUT Fotso Victor de l'Université de Dschang, Bandjoun		
Universite de Yaounde I, Yaounde		
African Advanced Level Telecommunications Institute, Nairobi	Kenya	10
East African College, Nairobi		
Egerton University, Njoro		
Jomo Kenyatta University of Agriculture & Technology, Nairob		
Kenya College of Accountancy, Nairobi		
Kenya College of Communication Technology, Mbagathi		
Kenya School of Professional Studies, Nairobi		
Loreto College, Msongari, Nairobi		
Maseno University, Kisumu		
St. Martins Academy, Nairobi		
Abubakar Tafawa Balewa University, Bauchi	Nigeria	8
Ahmadu Bello University, Zaria		
Bayero University, Kano		
Fantsuam Academy, Kafanchan		
L.I.F.E Development Academy, Lagos		
University of Benin, Benin		
University of Jos, Jos		
Wangonet, Lagos		
Kigali Institute of Science, Technology and Management, Kigali, Rwanda	Rwanda*	1
ESMT, Dakar	Senegal	8
IME, Senegal		
IPG-ISTI, Dakar		
John Fitzgerald Kennedy, Dakar		
Saidou Nourou TALL, Dakar		
UCAD, Dakar		
UGB, Dakar		
Université du Sahel, Dakar		
Gulu University, Gulu	Uganda	7
Islamic University in Uganda, Mbale		
Makerere University Faculty of Computing and Information Tec		
Mbarara University of Science and Technology, Mbarara		
Uganda Christian University, Mukono		
Uganda Martyrs University, Kampala		
Women and Gender Studies, Kampala		
Copperbelt University, Kitwe	Zambia	3
NIPA, Lusaka		
University of Zambia, Lusaka		

* One instructor had recently moved to an Academy in Rwanda, this Academy reflects their current affiliation with the Cisco Networking Academy Program.



GCR

GCR Custom Research was commissioned to conduct the Africa LDC Initiative Impact Assessment as an independent research entity. GCR Custom Research is a full service strategic market research company focusing on the technology industry. The company was originally formed in 1979 and has more than 27 years experience conducting primary research for Fortune 500 technology companies.

Date: June 2007

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