

AEIRS Educator Workforce Development Survey

Introduction

Over the last several years, the United States has experienced intermittent shortage in its healthcare workforce, and the situation is predicted to get worse as a result of an increased growth in the American population, as well as a surge in retirement of the baby-boomer generation. The aging of the population and advances in the treatment of acute and chronic diseases will definitely increase the demand for radiographers to perform diagnostic imaging and therapeutic services. According to the Bureau of Labor Statistic, it is estimated that an additional 75, 000 radiographers will be needed by the year 2012 .This shortage is occurring at a time when an additional 31, 000 specialized technologists are needed within the field of radiologic sciences. With evident constraints of a severe shortage of qualified imaging professionals, as well as faculty, the Association of Educators in Imaging and Radiologic Sciences (AEIRS) commissioned a workforce committee to investigate the scope of the problem, and identify factors that might be responsible for the shortage, as well as recommending strategies in minimizing the potential impact of faculty shortage.

Significance of the Problem

In the late 1990s many radiography programs had difficulties attracting students because candidates were lured by high paying Information Technology (IT) jobs. However, with economic volatility within the computer industry and corresponding loss of IT jobs in the later part of the decade, many students began searching for career opportunities in radiologic sciences, due in part to the to the increased demand for radiographers and compensatory gains enjoyed by the professionals in the industry. According to statistical data from the ASRT (2007), enrollment in radiography and radiation therapy programs has been rising consistently for the last five years, but stabilizes in 2007 at 1.2% and

3.3% respectively. In contrast, while there has been a surge of interest in the radiologic sciences, many programs lack the capacity to accept students due to faculty shortage or space and budget constraints. According to the 2005 survey of ASRT (2205), 32% of qualified students were turned away by many programs due to staffing or capacity constraints. The situation is not unique to radiologic sciences, but parallels the prevailing scenario within the health sciences programs. According to the American Association of Colleges of Nursing (AACN, 2005), nursing schools rejected 27,000 qualified applicants in 2004 primarily because of faculty shortage. Also, eighty three percent of Physical Therapy programs were unable to fill many vacant faculty positions for several months (Pearl 1987). Similar concerns resonate within other medical programs such as pharmacy and medical schools. According to Willett (2007), more than 20 percent of the faculty in pharmaceutical schools left to pursue lucrative careers in clinical pharmacy or pharmaceutical industries.

Retirement

The average full time Radiologic science educator is 54 years of age. According to ASRT(2005), majority of educators who were born in the baby boom generation, between 1943 and 1959 will be retiring soon. This group is already approaching 62 years of age, a stage at which many faculty start to retiring.

The number and rate of faculty retirements have become areas of increasing concerns in other disciplines, too. Nursing for instance has experienced an alarming faculty shortage in recent years. The shortage of educationally prepared nursing faculty is expected to increase in the next decade due to the retirement of a “graying professoriate” (Hinshaw, 2001). AACN (2005) predicted that 70 percent of all nursing faculty positions will

become vacant by 2010 due to attrition. The AACN went a step further in speculating that early retirement is precipitated by a restructuring of retirement benefits by many institutions that are facing fiscal problems. As a result, many educators are opting for an early retirement to minimize the erosive impact on their retirement benefits.

Salary

Salary disparity between academia and clinical practice is cited as one of the major hindrances to hiring and retaining faculty in the RT programs. An increased salary for radiographers, as well as increased opportunities for students with advanced modality qualifications outside the academic setting have contributed to the shortage. According to Sal Martino (ASRT, 2005), the median salary for radiologic science faculty in 2005 was \$48,833, which ranks at the 19th percentile of salaries for full time radiologic technologists. From a cost benefit perspective, the situation does not bode well for individuals aspiring for careers in academia, considering that the return on investment is extremely less than the cost of the training. To further compound the issue, many training programs are facing huge budgetary constraints and cannot afford to fund retirement benefits to compensate for noncompetitive salaries. As a result, faculty members do not feel a sense of job security and typically end up quitting academic positions to work in the clinical setting where there is an abundance of such enticements.

Lack of New Graduates to Assume Teaching Roles

Pedagogical emphasis in the radiological sciences has traditionally been focused in preparing graduate to be proficient in technical skills with less emphasis in teaching or academic skills. Educational preparation for radiographers has traditionally taken place primarily in hospitals and colleges. There are currently 611 institutions sponsoring

accredited radiography programs in United States (ASRT, 2007). Of these programs only 31 (5%) offer a baccalaureate degree program, which provide graduates with career opportunities in teaching. The bulk of the institutions from hospital-based or community colleges grant certificates or associate degree with an overwhelming emphasis on technical competence, with minimal opportunity in advancement into teaching. As a consequence of this limited training, many graduates do not have the opportunity in developing teaching skill capabilities and thus feel uncomfortable in selecting careers in academic setting. Obviously, this pattern has repeated itself over the decades, thus resulting in a cumulative deficit of full time faculty in the profession. The lack of new entrants into the teaching profession in some ways has exacerbated faculty shortage especially now that many baby boomers are getting ready to retire from the profession with no replacement.

Summary of the Survey

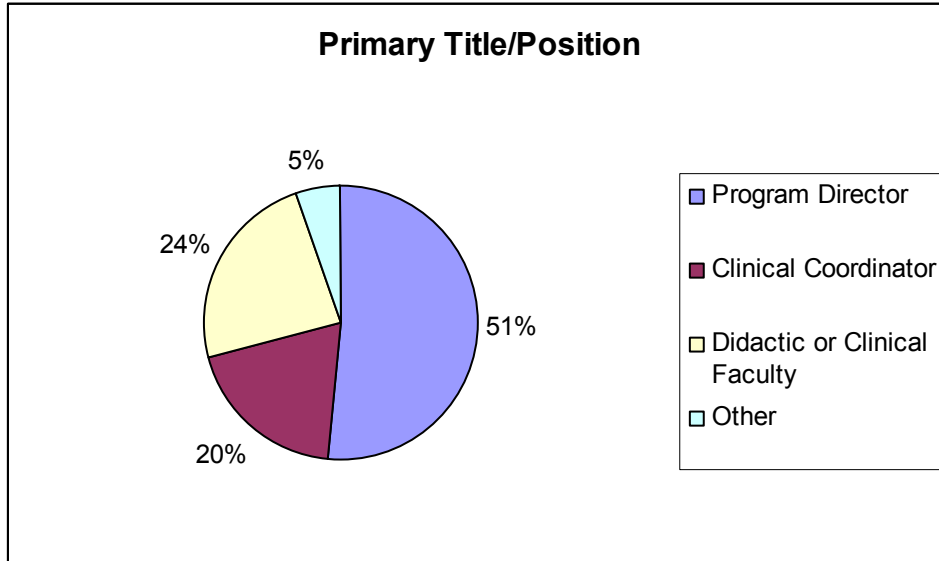
The survey of the AEIRS membership was conducted June – July of 2006.

In all, 649 members responded all or in part to 14 questions that asked for descriptive characteristics of themselves or their programs/institution, one affective question that asked for satisfaction information along 11 variables, and one free form response question. The following is a summary of the responses.

Descriptive Characteristics

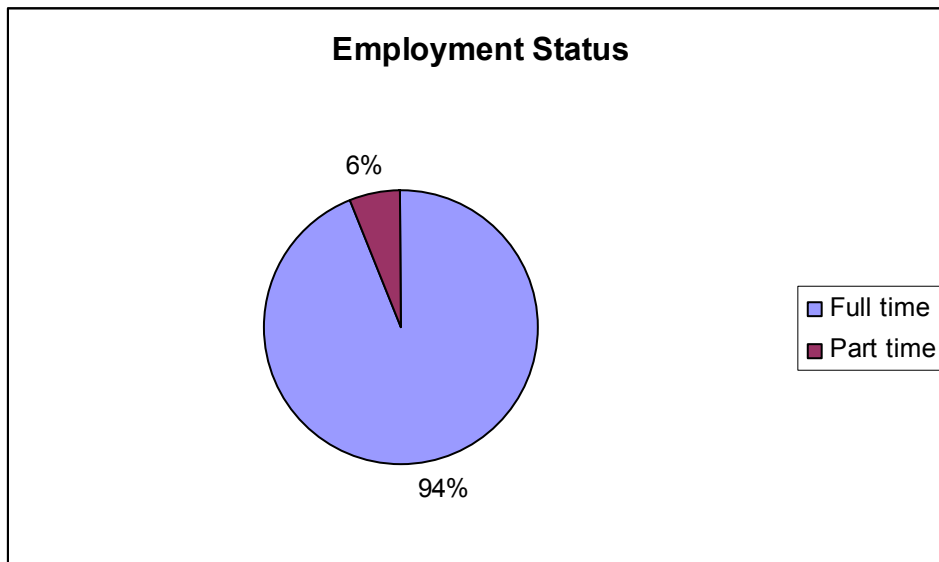
Questions 1,2,4, 8-14 asked the participant to identify personal characteristics.

1. Which of the following describes your primary title or position at your institution?



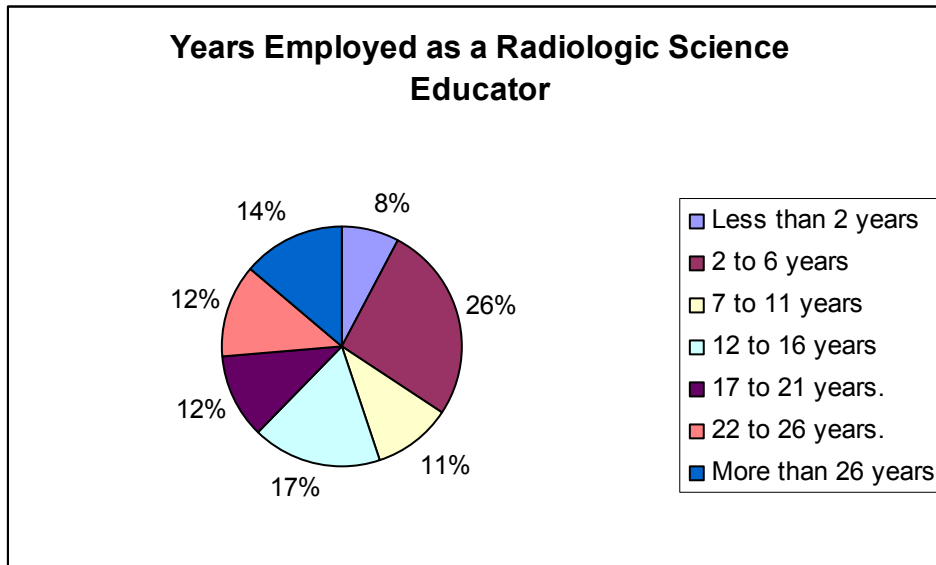
341 (51%) of respondents indicated they were Program Directors at their institution. 288 (44%) indicated that they were also affiliated with a radiologic science program either as a clinical coordinator or as faculty.

2. Please indicate the status of your employment.



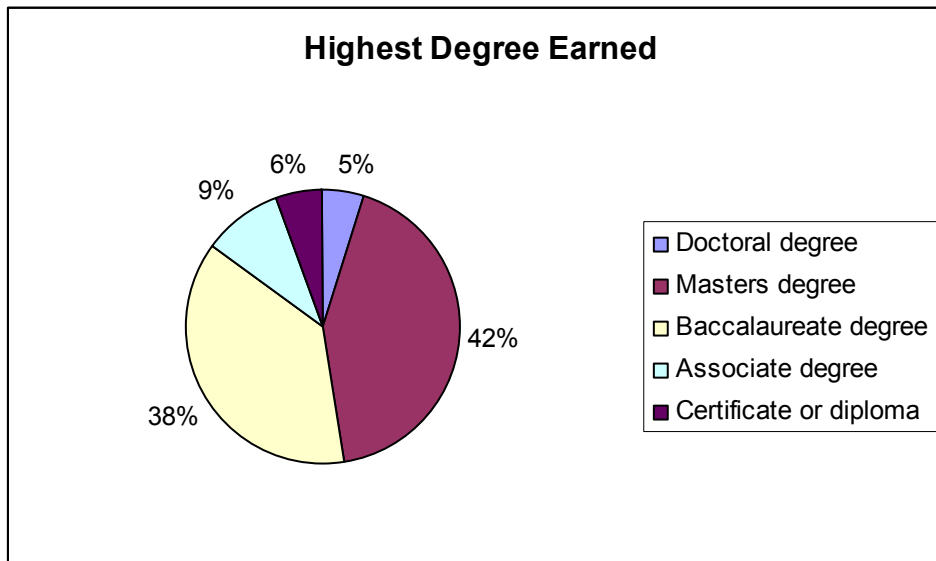
94% of respondents (608) indicated that they were full time employees in their programs.

4. How many years have you been employed as a radiologic science educator?



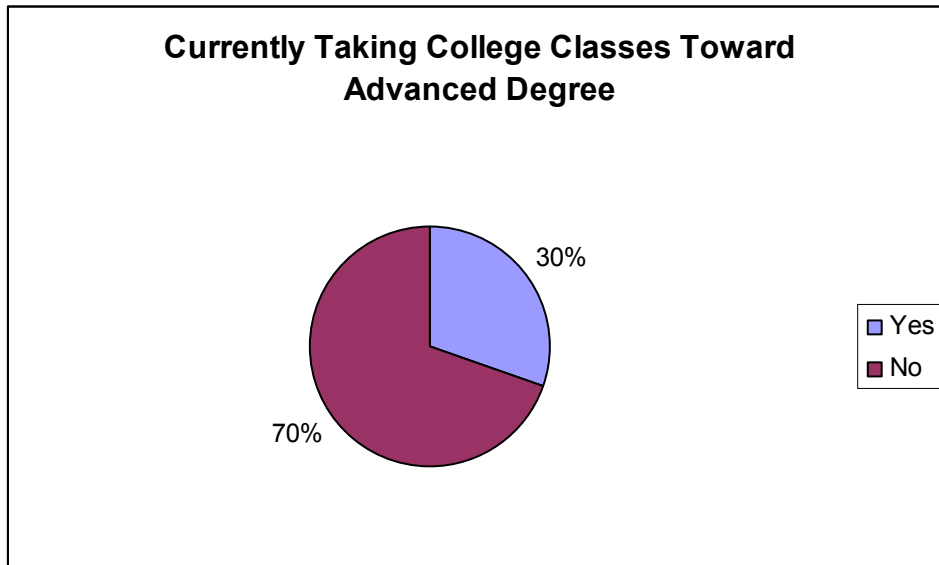
169 (26%) of respondents indicated they've been radiologic science educators for a period of 2-6 years. However, 170 (26%) of respondents have been educators for 22 years or more, meaning that a large percentage of the educative body will approach retirement in the immediate future.

8. What is the highest degree you have earned?



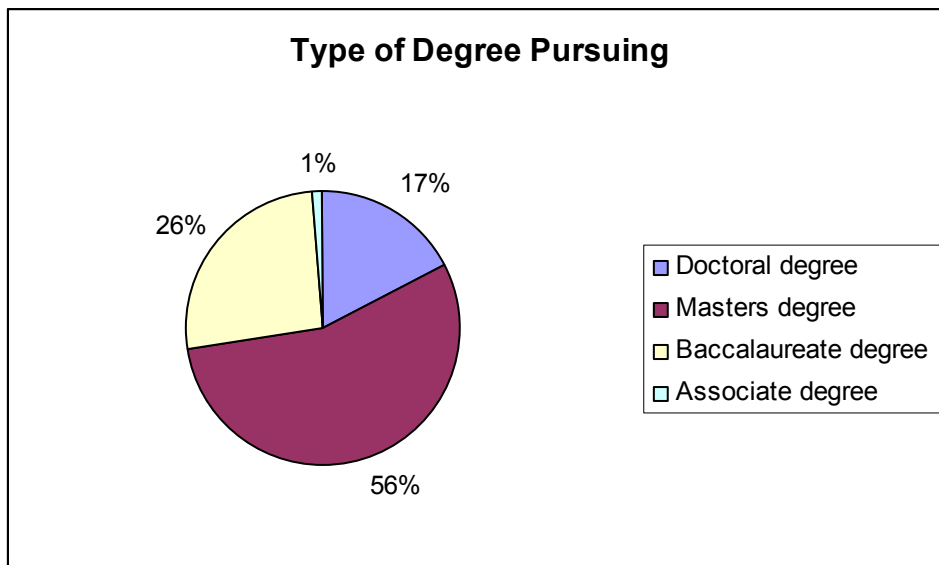
42% (273) of respondents have earned a Masters Degree. 242 (38%) of respondents are reporting a Baccalaureate Degree.

9. Are you currently taking college classes toward earning an advanced degree?



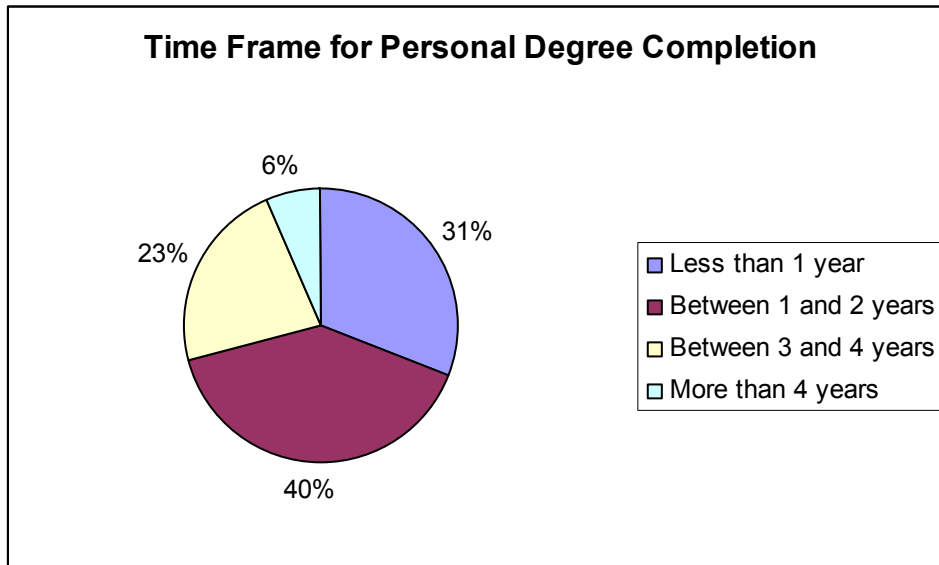
70% of survey respondents (433) are currently taking courses towards an advanced degree.

10. Please indicate the type of degree you are currently pursuing.



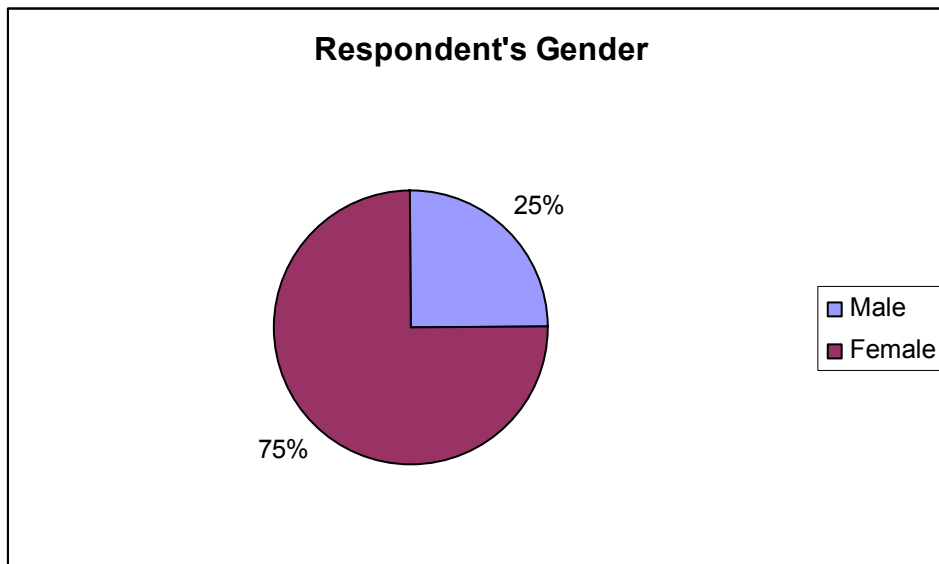
134 or 73% of respondents to this question report they are seeking a graduate level degree, the majority of which will be at the Masters Degree level.

11. In what time frame do you anticipate completing this degree?



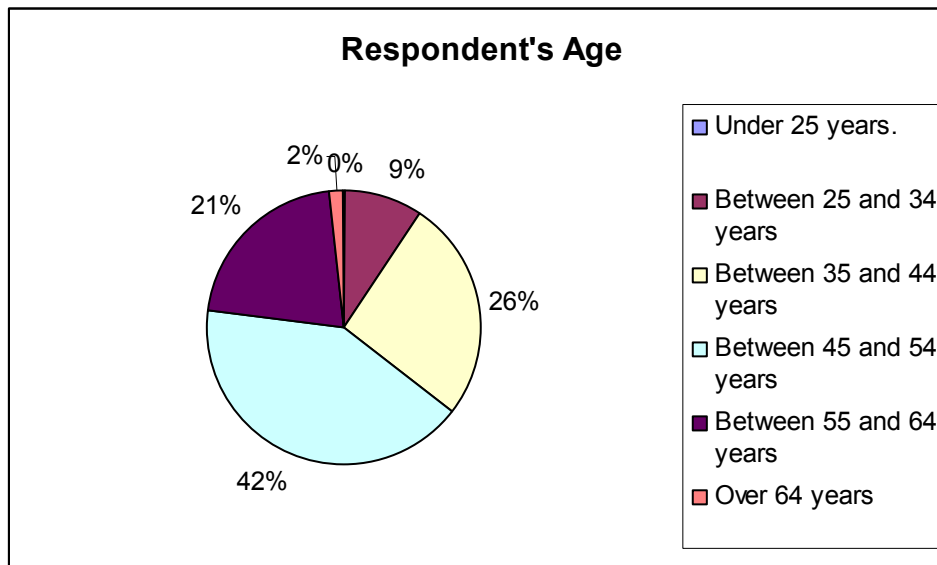
71% of the respondents (134) to this question expect to complete their education within the next 2 years.

12. What is your gender?



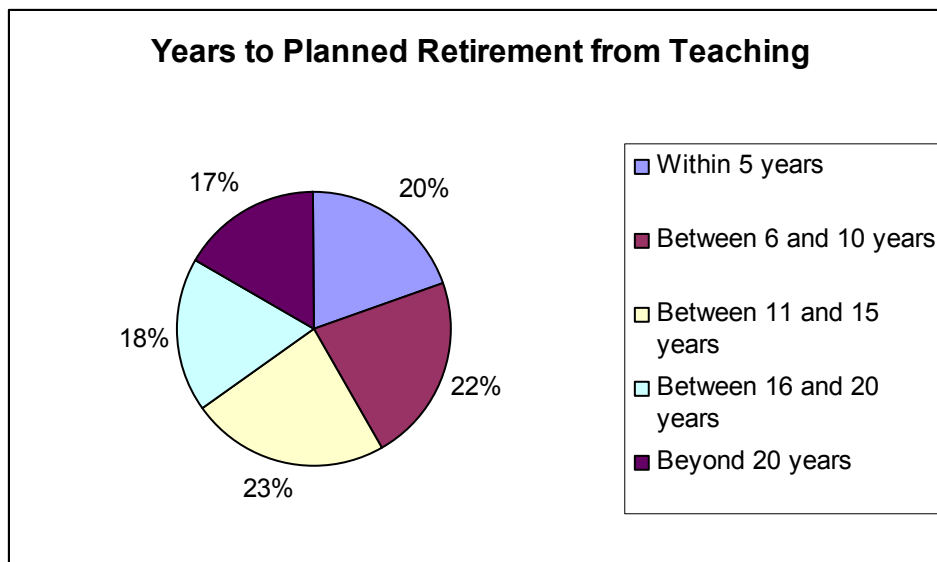
480 (75%) of the respondents to this question were female.

13. Please state your age category?



23% (147) of respondents are over 55 years old. Another large cohort (265) or 42% are between the ages of 45-54. Therefore, 75% of the educative body is older than 45 years old. The eminent retirement of this cohort should lead to discussions of educator recruitment.

14. How soon do you plan to retire from the teaching profession?

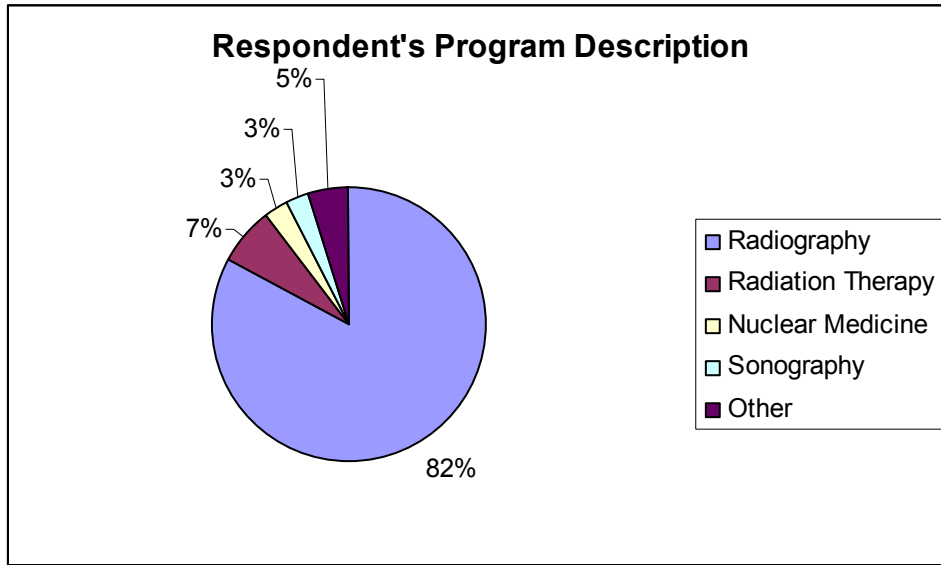


265 (42%) of educators plan to retire within the next 10 years. When compared to the 170 educators who reported being in the profession for 22 years or more, this may mean that approximately 35% of those planning to retire will be leaving the education ranks for

reasons other than longevity. Again, educator recruitment needs to be addressed by the professional bodies.

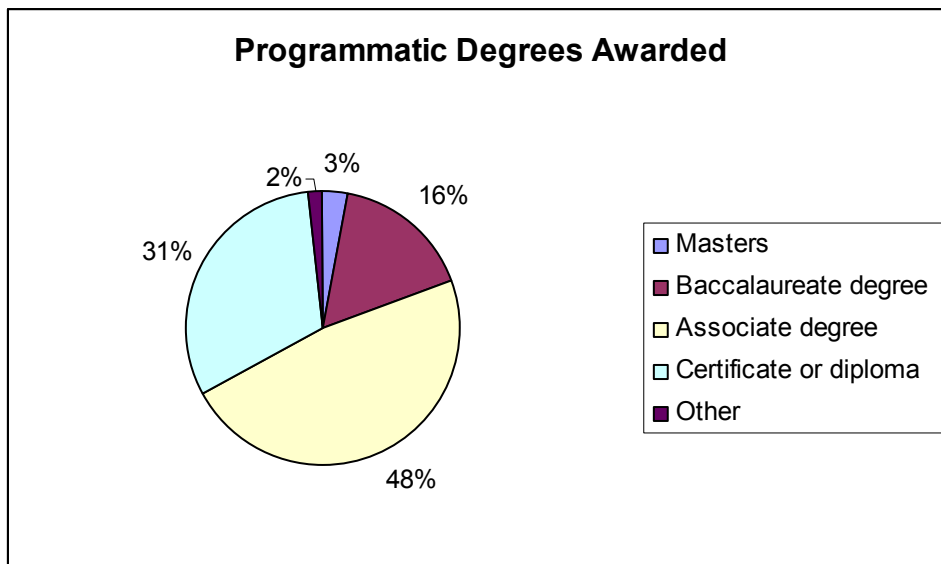
Questions 3, 5,-7 asked the participant to identify institutional and/or programmatic characteristics.

3. Which of the following best describes your program?



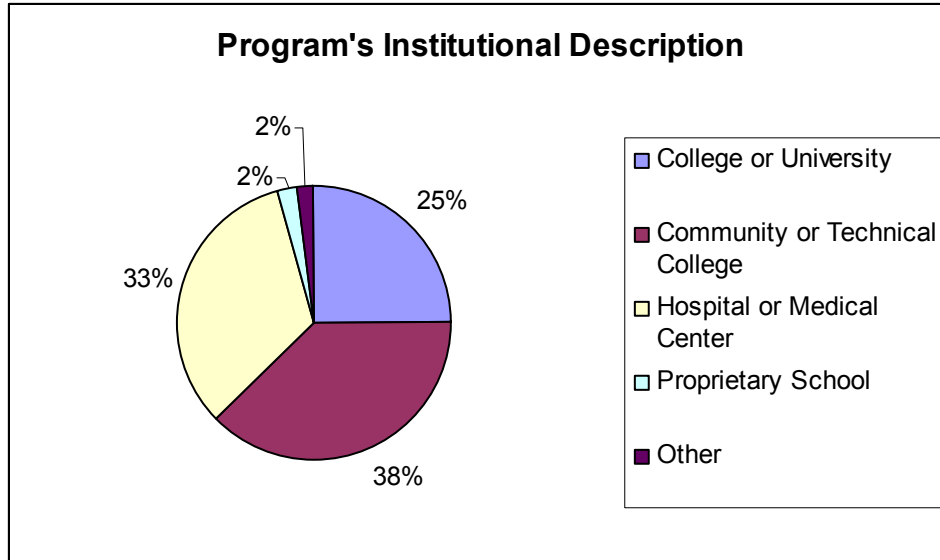
563 (82%) of respondents participate in a Radiography program.

5. What degree is awarded to graduates of your educational program?



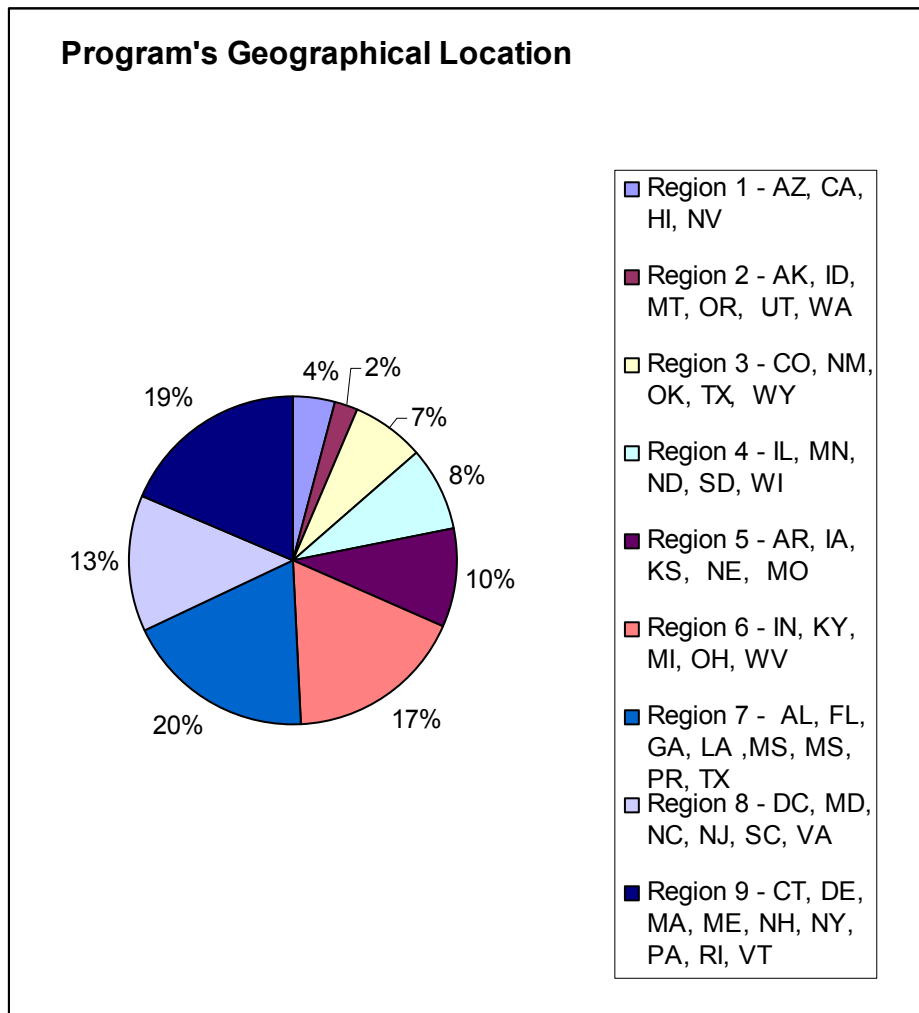
Respondents indicate that 48% (351) of current educators are in programs that award the Associate Degree.

6. Which of the following best describes the type of institution where you are employed?



One third (33%, or 217) of the survey respondents indicate that they work in the Hospital environment. A somewhat larger section (38% or 243) works in the Community or Technical College programs.

7. In which geographic region of the United States are you currently employed?



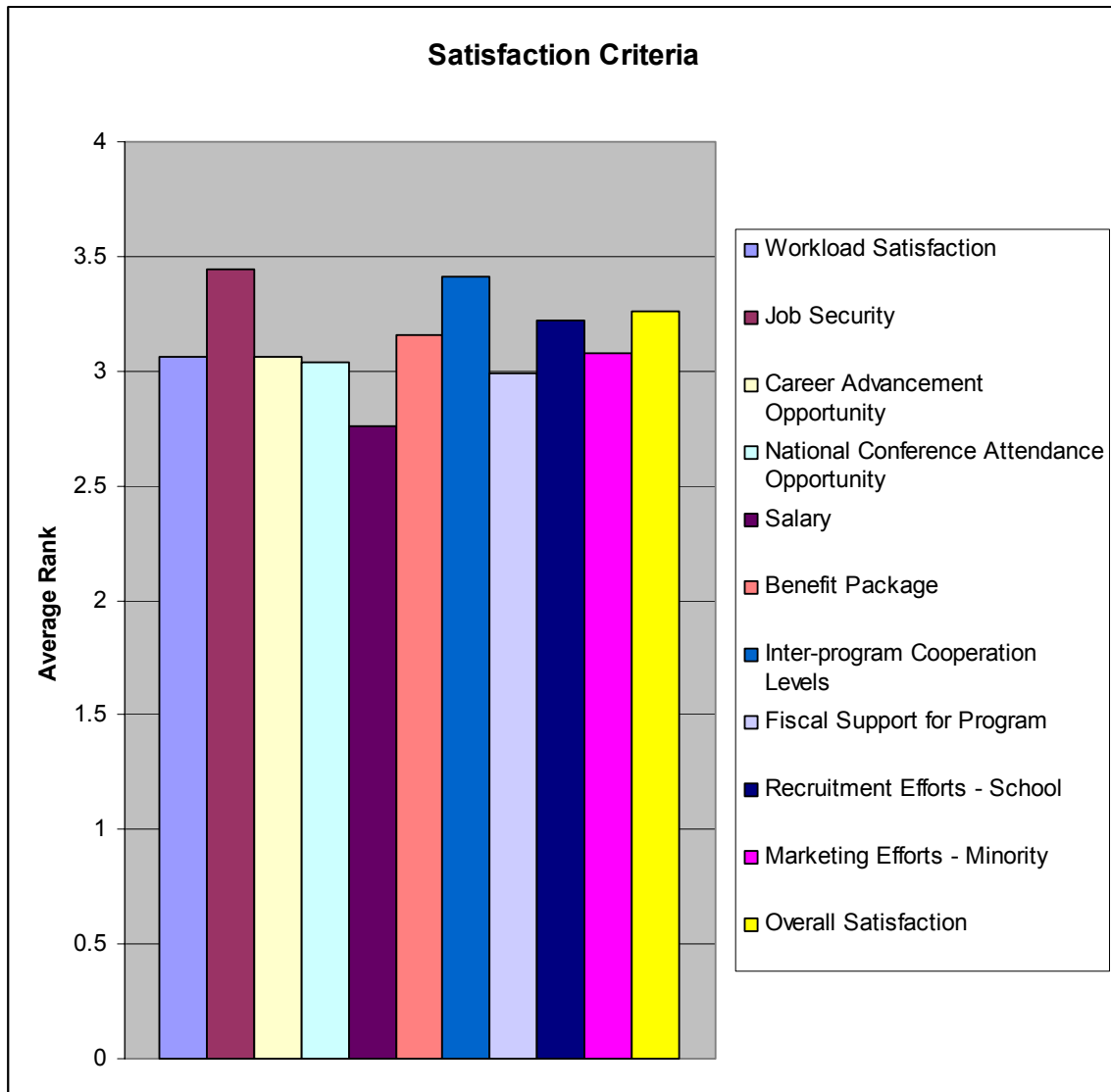
Out of all the categories in this survey, this one probably is the most equitably distributed. One can see that Region 7 held the most respondents.

Question 15 is an affective question that asked for satisfaction information concerning multiple aspects of the educator's employment.

The average rank is on a 4.0 scale, with 4 = Very Satisfied, 3 = Somewhat satisfied, 2 = Somewhat Dissatisfied, and 1 = Very Dissatisfied. Overall, respondents indicated that they were somewhat satisfied with their working environment (average rank = 3.26). Specifically, the respondents seem to indicate that they were satisfied with Job Security (average rank = 3.44) at their institution, although they were less satisfied with their Benefits Package (average rank = 3.16), and much less satisfied with their Salary (average rank = 2.76). Other aspects of the respondents' working environment, from Workload to Career Opportunities to Fiscal Support for their Program, to Marketing all seem to promote a feeling of being satisfied. And last, respondents indicate that they are almost as satisfied with Inter-program Cooperation Levels (average rank = 3.41) as they

are with their job security. This would seem to speak highly of the Association's educative community's ability to work together.

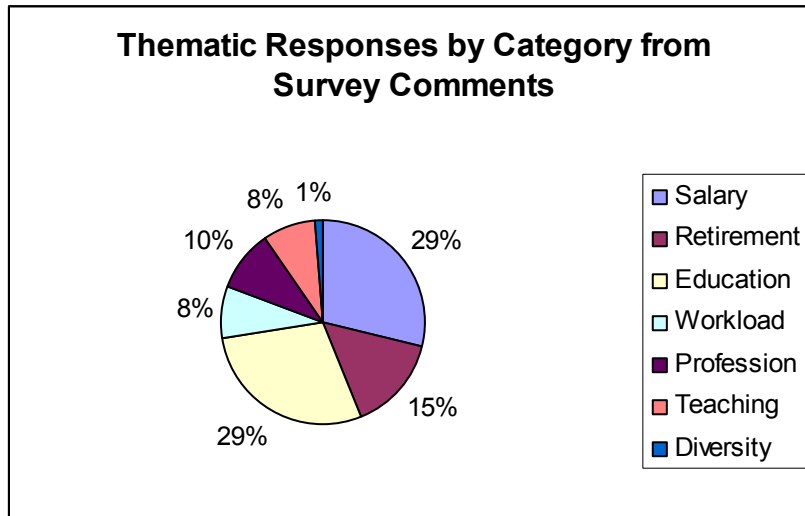
To corroborate the indicators gained by ranking the responses to this question, a One Sample Chi-square analysis of the 11 satisfaction categories was conducted. Each category was bifurcated to Satisfied and Dissatisfied groups. The Chi-square for each satisfaction category was significant to the 0.001 level, confirming the ranking information described previously, that the majority of respondents were satisfied with their positions within their programs and affiliated institution.



Question 16 is an open response question and is discussed below:

AEIRS EDUCATOR WORKFORCE DEVELOPMENT SURVEY

Question 16 of the survey allowed participants to comment, and produced 90 comments offered out of 649 surveys returned. A content analysis of the comments provided by the survey subjects was conducted. The following “global” themes were identified: Salary, Retirement, Education, Workload, Profession, Teaching, and Diversity. The chart below describes these general thematic responses.



Further, analysis of these themes indicated the tenor of the theme. These thematic comment synopses are listed below:

Salary

Pay at educator’s level is abysmal
Sacrifice income to teach
Pay is a form of recognition and respect
Not compensated for required education
Keeps new instructors from going into teaching

Profession (those who can teach are retiring)

I encourage my students to go into teaching
HOWEVER, the salaries for teachers are worse than for practitioners
Need more scholarships so faculty can go to school
Need more recruitment and advertising.

Status and Respect

Not what it should be for this profession
Not compensated or recognized for increased education or experience

Lack of support from administration

Paid by hospital but teaching in college
Need more scholarships so faculty can go to school

Workload

Is overwhelming
Prevents me from keeping up education, research, and skills

Diversity needed in faculty

Teaching

Need more online
Concern for expanding credentials
Conflict between the “hats” required
Administration vs teaching
Practice vs teaching
Have to teach but don't get paid for teaching
Serving more than one master

Education

PD advanced educational requirements not compensated as similarly educated radiology department directors
Program(s) will close without mastered RT
Master's degree puts an added financial strain on educators
No fiscal incentive to meet requirement for MS
Resigning/leaving teaching due to MS requirement
Masters degree requirement may close schools

Retirement

I will be retiring within 3 years (the program may consolidate or close)
My reasons for retiring and not continuing on for my Masters is that the hospital based program will not attract students
I have been employed as PD for 35 years and am not securing my Masters degree and am therefore being forced to retire
I am retiring at the end of the next academic year
No one is in the pipeline to replace me when I retire. Our clinical coordinator will be retiring about the same time I do

DISCUSSION

It is interesting to note in this analysis that concerns of insufficient salaries and the need for Master's degreed program directors filled the overwhelming majority of the comment lines, accounting for 58% of all comments. Such comments as, “*Pay at educator's level is abysmal*” and “*I have been employed as PD for 35 years and am not securing my Masters degree and am therefore being forced to retire*” pepper the comment lines with the sense of frustration these respondents were feeling. Not all comments referring to education were negative. Some were factual, such as, “*I will begin work on a master's degree in June 2006...*”. However, none could be attributed as a positive comment towards the education requirement.

Additionally, the planned retirement of educators and program directors was a genuine concern for the intended retirees, and mentioned in 15% of all comments. Comments such as, *“I will be retiring within 3 years (the program may consolidate or close)”*, and *“No one is in the pipeline to replace me when I retire. Our clinical coordinator will be retiring about the same time I do”* send a sense of urgency to the reader that these faculty feel they have fought the good fight, but don’t see or hear the cavalry charging up to replace them when they leave teaching.

Also, it should be noted that within several of these three main themes, the comments were interconnected. As one responded stated, *“a pay increase is needed for program directors, especially with the requirement for advanced degrees.”*; and another, *“since I am required to spend thousands of dollars out of pocket to earn a master’s degree, I plan to pursue a MHA and leave the teaching profession to earn a better salary”*, and a third example, *“Requiring a Master’s degree for Program Directors puts an added strain financially on educators that are interested in advancement but are not financially able to afford school. There is also no compensation for spending this much money and obtaining the degree”*. And to conclude this individual’s comment, *“Many of us will leave the profession rather than pursue a Master’s Degree and the profession will suffer due to lack of replacements”*. These comments indicate a negative influence from dissatisfaction with salary and with the additional education requirements imposed on Program Directors.

Survey Conclusions/Discussion

The satisfaction information would indicate that a statistically significant majority of the educator workforce is satisfied with their position and facilities. Salary seemed to be satisfactory, although it ranked the lowest of the 11 indicators.

It would appear then that the radiologic sciences’ educational corps is facing the challenge of a retiring cadre that has been predicted by the aging of the baby boomers, a concept supported by item 14 in the survey indicating 42% of educators will retire within 10 years, 65% within 15 years. However, of concern is the sense from the Question 16 response comments that the added influence of perceived salary differentials between practicing technologists and educators, and additional education requirements imposed from external sources, seems to be functioning as a catalyst to hasten the expected withdrawal of additional individuals from the teaching corps.

It would seem then, given the survey responses and comments, that as a professional body, the emphasis of our professional discussions should focus on educator recruitment and contingency plans in case the needed recruitment does not come to fruition. Salary may not be easily addressed by professional organizations due to the institutional nature of an educator’s contract, but continuation and enhancement of scholarships would seem to be achievable. Further, if the planned retirements do indeed produce an educator shortage, it may be necessary to develop models for sharing expertise among programs, such as one faculty to teach patient care regionally, while another teaches physics or radiation safety. The alternative will be to consolidate programs, or more deleteriously,

to close programs at a time when more healthcare practitioners are predicted to be needed, not less.

ASRT – 2007 Enrollment Snapshot of Radiography, Radiation Therapy and Nuclear Medicine Programs. Retrieved February 10, 2008 from <https://www.asrt.org/Content/News/PressRoom/PR2007/asrtenroll071221.aspx>

American Association of Colleges of Nursing, 2003-2004 Enrollment and Graduations in Baccalaureate and Graduate Programs in Nursing, Retrieved March 5, 2008 <http://www.aacn.nche.edu/Media/Backgrounders/facultyshortage.htm>

Hinshaw, A. (2001). A continuing Challenge: The Shortage of Educationally Prepared Nursing Faculty, Online Journal Of Issues in Nursing, Vol 6 No. 1 Retrieved January 7, 2007 from Http://www.nursingworld.org/pjin/topic14/tcp14_3.htm

Pearl, M.J (1987), A marketing Approach to the Physical Therapy Faculty Shortage in Higher Education Retrieved August 8, 2007 from <http://proquest.umi.com/pgdweb?index=139&sid=3&srchmode>

U.S. Department of Labor, Bureau of Labor Statistics. Occupational Outlook Handbook 2006-2007 edition. Retrieved March 3, 2008, from <http://www.bls.gov/opub/ooq/1999/spring/oochart.pdf>

Willett, M. (2007) Pharmacists schools feel a pinch *Knight Rider Tribune Business* New. Washington Vol 12, No 3