

Has The Time Come for a New Undergraduate Degree ? BACHELOR OF ARTS AND SCIENCE

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Abstract

Confusion over the differences between BA and BS degrees by students, faculty, and employers, as well as changing degree requirements within departments of Agricultural Economics suggest that a new undergraduate degree might have merit. A degree that more closely reflects the diversity of the arts and science training of Agricultural Economics students would recognize their true achievement. Is a Bachelor of Arts and Science in Agricultural Economics an idea whose time has come?

Introduction

According to Webster, a Bachelor of Arts Degree is the lowest degree conferred by a four-year college, university, or professional school in the area of liberal arts. These arts are further defined as the studies (such as language, philosophy, history, literature, and abstract science) intended to provide, chiefly, general knowledge and to develop the general intellectual capacities as opposed to professional or vocational skills.¹ On the other hand, a Bachelor of Science degree is also considered as the lowest degree conferred by one of the above in the area of science. Science usually, but not exclusively, refers to one of the natural sciences, and the study involves systematized knowledge covering general truths of the operation of general laws, especially as obtained and tested through scientific methods.² At this point, what disciplines are arts or sciences becomes rather vague. For example, the suffix "logy" is usually used to denote a science as in biology or ecology, but it is also used for disciplines are arts or sciences becomes rather vague. For example, the suffix "logy" is usually used to denote a sufficiently confusing, the suffix can also be used in the art of oral and written expressions such as in phraseology. The major point is, from a definitional point-of-view, there is uncertainty as to what is an art (skill acquired by experience, study, or observation) or a science (reproducibility — all events have preceding causes that can be identified and logically understood), and where one starts and the other ends.

Of greater significance, however, is the problem created in a practical sense by the distinction between a BA and BS degree by students, many faculty, and often, employers. At all levels, the confusion seems to be the result of two major factors — a lack of understanding of what is and what is not required within departments and at a college level; and secondly, folklore and biases that

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have developed about the BA and BS degree programs. Let us examine some of the similarities and differences between the two bachelor degrees and see if a third alternative degree has some merit.

Inherent Wisdom

Everyone knows that the 'tougher' degree is the BS, or is it the BA? Why the BS — because it requires more credits and science courses, or was that fewer credits and science courses? But, if one wants to pursue an MS, is not a BS degree a must? How about an MBA degree? Should one not have a BA as background? Although one can get answers on either side of these questions, few hard and fast rules seem to hold for most Land Grant Institutional programs.

Historically, one can argue most of the above positions and find a number of authors who will agree with any position. For example, Dressel traced the historical trends in higher education and noted that sciences had been notoriously neglected in the old liberal education on the grounds that "these (the sciences) had less liberal content than the humanistic studies." He further observed that, "The Bachelor of Science degree first came into being as a somewhat inferior degree because the classic tradition would not permit the Bachelor of Arts to be awarded to anyone who had not followed the required classical curriculum." (Dressel, 1963) On the other hand, with the trend towards professionalization in educational programs, more science and technically oriented courses have been added at the expense of the traditional liberal educational courses. "We need read but little history about the land-grant movement to discover that while almost everyone agreed that a 'liberal education' was the aim, there was (and still is) great divergence in thought about the space to be allowed the liberal content." (Hannah, 1976)

In the agricultural economics and related areas, after years of fairly specialized courses, the more recent trend has been towards a liberal educational emphasis with breadth and flexibility. (Beck, Hess, Manderscheid, Spitze) In short, it appears, in terms of the literature, that the Land Grant Institutions, in general, and the Agricultural Economics programs, in particular, have changed emphasis from a strongly oriented vocational-technical-professional training towards a more liberal arts education. Yet, individual programs seem to be trying to maintain areas of speciality via flexibility in requirements which allows them to tailor a course of study for individual students with as much or as little technical emphasis as desired.

1. Webster's New Collegiate Dictionary, G & C Merriam Co., Springfield, Massachusetts, 1974, p. 662.

2. Ibid., p. 1034.

Methodology and Data

In an effort to examine empirically some of the practices in terms of degree credit requirements for BA and BS degrees at Land Grant institutions, forty curriculums at various institutions were examined covering a range of academic years from 1976 to 1979. Total credit requirements for graduation were recorded for both BA and BS degrees. In addition, average credit requirements as well as credit ranges were examined for both semester and quarter programs.

In the northeast Land Grant schools, ten programs in Agricultural Economics (or closely related areas) were further examined by percentage (of total degree requirements) of college and department or area requirement for the purpose of determining the percentage of related arts and sciences required courses.

To facilitate these comparisons, national college-level requirements were compared in percent of credit by total college credits, communication and English credits, social science and humanities credits, and math and science credits. Comparisons at the northeast department program level were in terms of percent of credit by total department or program credits, agricultural economics and economics courses, statistic and math credits, and other credits. Lastly, the total percentage of unspecified credits for a degree for northeastern colleges and departments was calculated along with averages for all categories for the ten programs.

Results

College Comparisons

The examination of the credit requirements for BA and BS programs in Land Grant institutions can be found in Table 1. Of the forty institutions examined, twenty-eight, or 70 percent, were on a semester basis. Of these, twelve schools (43 percent) offered a BA along with a BS degree. On the other hand, six of the twelve schools on a quarter system offered a BA program as well as their BS programs. Overall, of the forty schools, eighteen (45 percent) offered a BA degree along with the traditional BS programs.

When examining degree credit requirements in both the semester and quarter schools, the average credit requirements for graduation were only slightly greater for a BS than a BA program. However, only two to three additional credits, on the average, were required in both the semester and quarter programs. Also noteworthy was the fact that the range of credits for the BA and BS degrees overlapped, indicating that for some programs more credit would be required in arts, and in others, more for the sciences. Eight schools were found to have the same credit requirements for both degree programs.

A further complication in comparing average credit requirements between schools was that several schools had variable graduation credit requirements for different program options. These credit ranges were found in both BA and BS programs.

Table 1. Total Credit Requirements for Forty Land Grant Institutions for Bachelor of Arts and Science Degrees - 1979

Institution	Semester Credit	
	Bachelor of Arts	Bachelor of Science
1. Arizona	--	130
2. Arkansas	--	132
3. Clemson - S. Carolina	132	134
4. Connecticut	120	120
5. Cornell - New York	--	120
6. Idaho	128	132
7. Illinois	124a	128
8. Kentucky	128	132
9. Louisiana State	128	134
10. Maine	120	120
11. Maryland	124	120
12. Mississippi	--	128
13. Nebraska	--	128
14. New Hampshire	128	128
15. New Mexico State	--	132
16. Nevada	120	128
17. North Carolina State	--	130
18. Oklahoma	128	130
19. Texas A & M	--	124
20. Penn State - Pa.	--	130a
21. Purdue - Indiana	--	132a
22. Rhode Island	--	130
23. Rutgers- New Jersey	128	128
24. S. Dakota	--	136
25. Vermont	--	120
26. W. Virginia	--	128
27. Wisconsin	--	124
28. Wyoming	--	132
Average	125.7	128.2
Range	120-132	120-136
Institution	Quarter Credit	
	Bachelor of Arts	Bachelor of Science
1. Auburn - Alabama	--	210
2. California - Davis	--	180
3. Colorado State	192	192
4. Florida	188	192
5. Georgia	--	195
6. Iowa State	192	192
7. Michigan State	180	180
8. Montana State	--	200
9. N. Dakota	--	183
10. Oregon State	192	192
11. Tennessee	--	198
12. Virginia, P.I.	189	190
Average	188.8	192.0
Range	180-192	180-210

a Average credit requirement for a range of credit programs.

Northeast Land Grant Agricultural Economic Program Comparisons

Although total credit requirements tell how many, they give no indication of what type of courses are required for graduation in an arts or science program. To get a better indication of the types of courses, ten programs leading to a BS in Agricultural Economics and offered in northeastern Land Grant colleges were examined. Table 2 lists college, department or area, and unspecified credit requirements as a percent of total graduation credit requirements.

As one would expect, a range existed within each category; but, in general, about one-quarter of the re-

Table 2. Comparison of Total Credit Requirements by College and Department for Agricultural Economics Programs in the Northeastern Land Grant Institutions - 1979.

State	Total College Credit	Percent of Total Requirements (BS Programs)					Dept. Req.	Unspecified Req. Coll. & Dept.
		Comm. & Eng.	SS & Hum.	Math. & Sci.	Total			
Connecticut	120	7.5	7.5	7.5	22.5	c	77.5	
Cornell - N.Y.	120	a	12.5	12.5	37.5	c	62.5	
Delaware	130	6.9	6.9	15.4	29.2	c	70.8	
Maine	120	5.0	12.5	c	17.5	37.5	45.0	
Maryland	120	a	10.0	7.5	25.0	39.2b	35.8	
Massachusetts	120	5.0	15.0	7.5	27.5	32.5	40.0	
Rhode Island	130	4.6	13.8	13.1	31.5	8.5	60.0	
Rutgers - N.J.	128	4.7	14.1	9.4	28.2	30.0b	41.8	
Vermont	120	5.0	10.0	5.0	20.0	10.0	70.0	
West Virginia	128	9.4	9.4	9.4	28.2	14.1	57.7	
Average	123.6	6.0	11.2	9.7	26.2	24.5	56.1	

a Must pass English and Communication test or take courses.

b Average credits used for several options.

c None specified in college catalogue.

quired courses are at the college level, one-quarter at the department level, and one-half are unspecified.

Within college requirements, social sciences and humanities requirements were the largest, followed closely by math and science and then communications and English. Although a fair amount of variation was present at the college level, much greater variation existed within the departments. Of the ten schools examined, six did not have a credit breakdown as was hypothesized, and of the remaining four, the 'other' category was so dominant that department level comparisons could not be made.

What did stand out from the department comparisons was that a large percentage of the required degree credits (35.8 to 77.5) was unspecified at a college or department level and is most likely determined by students in consultation with major advisors.

Major Points

Based on the review of literature, the data analyzed in this study, and observations over the past ten years, the following five summary points are offered:

Although the evolution of the BS degree from the traditional BA degree can be well documented (Dressel, 1963), it is less clear what disciplines or subject areas are arts or sciences. Students have desired to obtain two major objectives from a degree: (1) entrance into a graduate program, and/or (2) employment in a given labor job area. The problem in terms of what undergraduate degree is 'best' for what graduate program (or does it really matter?) or what degree is preferred by what occupation seems to be a constant student concern. Often, even faculty opinions are of little help in that faculty biases seem to follow their traditional BA or BS training and department or discipline orientations. The problem is often further compounded by industry employers who seek students on attributes independent of a BA or BS degree.

Secondly, it would seem one could obtain supporting literature for either position in terms of the need for

more or less arts or sciences in most curricula. The years have proven that we don't know the magic blend in our Land Grant institutions or in our individual Agricultural Economics programs, and that, perhaps, the best approach is one of minimum required credits with maximum flexibility.³ In one recent study of Agricultural Economics departments in the Northeast (Thatch, 1978), it was found that over the past seventeen years, total credit hours and the percentage of credit requirements at the college and department levels have been reduced. Furthermore, it was shown that the percentage of both technical and scientific as well as social science and humanities requirements has decreased but that the technical and scientific have decreased more.

As a third point, the results of the present study seem to indicate that in terms of total credit requirements, there is very little difference observed between a BS and BA program at Land Grant institutions. Furthermore, results from northeastern departments of Agricultural Economics show that more credits are required in BS programs in the social sciences and humanities than in the math and sciences at a college level. Although most departments have additional math credits and some additional science credits, individual department requirements are so variable that a conclusion cannot be drawn. The real key, however, seems to be that, on the average, more credits are unspecified for degree programs than specified so that programs can be tailored to individual needs and desires.

A fourth observation by the author and a number of colleagues over the past decade seems to indicate that, in terms of employment, what really is important are the individuals and their programs and not the type of degree. Many current campus recruiters list a BA or BS degree or no designated degree. Even in terms of pursuing a graduate education, motivation and basic skills seem much more important in acceptance for a graduate program than a BA or BS degree.

3. This should not be taken as a 'cop-out' to do nothing or to teach 'watered-down' courses but as a challenge to teach only basic core courses that are really needed for the program's objectives.

Finally, a recent journal article (Beck et al., 1977) reported that of forty-six departments of Agricultural Economics throughout the United States "almost two-thirds of the respondents (62 percent) identified agribusiness management as the program likely to experience the greatest growth in the near future." The basic skills needed to succeed in business would be (Flaumenhaft): (1) the ability to communicate, (2) the possession of human relations skills, and (3) the ability to solve problems. Interestingly, the skills in each of these areas is largely an art and none are unique to a BA or BS program. In fact, the skills are highly complementary and are needed in almost all fields.

Conclusions

Has not the time come for a degree that more clearly reflects the breadth of requirements at both the college and department level? Why not reward students who have met the requirements in both the arts and sciences with a degree that says exactly that.

This is not to say that we should eliminate the BA or BS degree from Land Grant institutions for those students who truly specialize in one of these areas. On the other hand, let's recognize those students who build a program in the liberal arts and in a scientific technical area with a degree that is worthy of the achievement.

This Bachelor of Arts and Sciences (BA & S) degree would seem to have merit in the Land Grant institutions in general and even more so in the departments of Agricultural Economics. For, has not the field of specialty of the agricultural economist recently combined the technical areas of agriculture with the more liberal arts areas of business? As we move into the '80s and beyond, is it not time to recognize basic changes and diversity in our curriculum and make others aware of it by initiating a degree that better reflects the training? Is a Bachelor of Arts and Science in Agricultural Economics an idea whose time has come?

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Classroom Network Planning For Nursery Management

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Abstract

The incorporation of a network planning system into a nursery management classroom could greatly aid teaching and learning of nursery business and technology. A network is an extension of a flow chart. It not only is a graphic representation of interrelated activities but includes time estimates necessary for the completion of each activity. The logic demanded by such a system results in comprehension of the important interrelationships inherent in the nursery business.

Introduction

Teaching a class in nursery management can be difficult in that practical technical skill necessary to grow plants must be incorporated with essential business and managerial skills. This problem is compounded by the fact that the nursery industry has grown rapidly in the last 10 years and in many cases has outgrown management capabilities. Nursery management graduates must be prepared to deal with the industry in this critical growth period.

Management techniques currently used by many nursery operators for control and scheduling include use of flow charts, graphs, record books, work calendars, or some combination thereof (4). PERT (Program Evaluation and Review Technique) is an alternative to these methods. It is a management tool which extends the concept of flow charting by assigning time estimates to each activity on the network diagram. The combination of a network diagram and time assignments provides management with a tool which does the following:

1. Shows at a glance the overall plan and progress achieved.
2. Makes evident those activities which could be in difficulty and require close observation.
3. Enables managers to visualize operations in more detail and with more accuracy.

The process necessary in dealing with network planning is one which demands logic and a thorough understanding of the components of an operation. The PERT concept, therefore, can be beneficial to managers, students, and instructors.

Network Planning

Network planning refers to a graphic representation of the logical sequence of events and activities necessary to complete an operation (Fig. 1). An activity is represent-

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