

**PRIMER  
FOR SELECTING  
GRADUATE PROGRAMS**

monograph



**GRADUATE COMMITTEE  
COUNCIL ON TECHNOLOGY  
TEACHER EDUCATION**

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**MONOGRAPH**

**PRIMER FOR SELECTING GRADUATE PROGRAMS**

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## CHAPTER I

### Graduate Education: A Profile of Degrees, Concentrations and Philosophy

by

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The decision to go to graduate school at either the masters, specialists or doctoral level may be the most important step in a student's professional life. It also can be one of the most confusing decisions he/she will make because of the various types of degrees and different philosophies which are prevalent in the profession. This chapter will help students understand the purposes of graduate degrees and the options which are available to meet their academic needs.

#### PURPOSE OF DEGREES

##### Masters:

Most masters degrees consist of courses which focus on either research or practice. The research based degrees are usually placed under the Master of Science (M.S.) or Master of Arts (M.A.) designations. In these degrees, students will find an emphasis on research, writing and some type of statistical analysis. Usually a thesis or research project is encouraged as the culminating experience and is designed to prepare students for advanced graduate work at either the specialist or doctoral level.

Practice oriented degrees have a focus on technical education and classroom/laboratory techniques. They are usually designated as Master of Science in Education (M.S.Ed.), Master of Education (M.Ed.) or Master of Science in Technology (M.S.T./M.S.I.T.) degrees. Generally these degrees focus on curriculum, instructional strategies, evaluation, facility design, department administration/supervision and philosophical issues. Usually the Masters degree is between 30 to 36 semester hours beyond the bachelors degree. These degrees are designed to improve professional and technical knowledge with a primary emphasis on classroom/laboratory use. They are popular for students who want a masters degree but intend to remain in the public schools as industrial/technology/vocational education teachers.

Today a great deal of confusion exists concerning masters degrees because the basic orientation of each type of degree is not as clear as the designation may indicate. Blending of purposes is common in our profession, and all types of masters degrees would allow students to continue in the public school or go on to advanced graduate study. However, the research, writing, and thesis experience will be most helpful if the student's goals are to seek an advanced graduate degree in the future. Therefore, it is a good idea to ask questions about the focus at each institution concerning degree options.

#### Specialists:

Two specialists degrees (Ed.S. and C.A.G.S.) are the primary vehicles for advanced graduate study between the masters and doctoral levels. The Educational Specialist (Ed.S.) degree is designed primarily to prepare students for supervision positions at the state, city or local

level. Emphasis is placed on vocational education regulations, grant writing, and supervision techniques. Some programs also provide technical update courses and curriculum design/ writing experiences. Usually the Ed.S. degree is 30 to 40 semester hours beyond the masters degree.

The second type of specialist degree is called a Certificate of Advance Graduate Study (C.A.G.S.) and has been used to help professionals who do not wish to seek the doctorate but need additional study beyond the masters degree. Typically, it focuses on curriculum, philosophy, and technical content with the goal of improving teaching skills and knowledge. In recent years it has been popular among community college teachers who need a technological update, community college philosophy, or administrative skills for handling department chairperson's responsibilities.

Both specialist options are designed as terminal degrees and usually are offered by institutions which do not offer the doctorate.

#### Doctorate:

Three degree options are used at the doctoral level in our profession. Historically, the Doctor of Philosophy (Ph.D.) has been a research oriented degree with a focus on philosophy, research, writing, and statistical analysis. It is designed to prepare students to do original research during the dissertation segment of the program. Most Ph.D. programs in our field require either a foreign language or computer language (statistics oriented) in addition to regular doctoral course work.

The Doctor of Education (Ed.D.) degree is more practice oriented with emphasis on instructional

design, curriculum writing and behavior analysis. The dissertation in this degree is usually focused on advancing the art of teaching or enhancing the curriculum delivery process. Some programs also offer field work with public schools to pilot new ideas. In many cases, the dissertation is based upon applied research conducted in the field.

New to the profession is the Doctor of Industrial Technology degree (D.I.T.), which is a research degree focused on modern industry and technology. For the most part, it is aligned closely with the Ph.D. model and includes industrial internships and field experiences. But, like the Ed.D., it makes use of the field experience as a basis of research to develop the dissertation. At this time, only the University of Northern Iowa offers the D.I.T. degree.

Doctoral degrees are used sometimes as entry level degrees for college and university teaching. Because doctoral degrees are considered terminal degrees, they help meet the necessary requirements for promotion and tenure at most institutions. Increasingly, directors of vocational education and state supervisors/curriculum specialists are seeking a doctorate because state agencies have increasingly been requiring the degree for leadership positions. Any of the three degrees mentioned probably would meet such criteria, and students should select a program based upon their personal goals.

Like the masters degrees, the purpose of doctoral degrees is not as pure as it might seem with research and practice occurring in all three options. If students are interested in a doctoral program, the funding and credentials of the graduate faculty may be as important as the focus of the degree. In most cases, the degrees are

flexible enough to allow students to conduct research in their area of interest.

One caution is necessary. Make sure that an accredited institution is selected for graduate work and that the degree is an "earned doctorate". The so called "un-earned" doctorates are not considered valid at most colleges and universities as credentials for employment.

#### CONCENTRATIONS AND PHILOSOPHY

Graduate degree programs in our profession have several content focuses which determine the type of philosophical approach to technology education that students probably will study. As an industrial arts major, one may wish to continue to gain knowledge in that same content area or expand his/her technical knowledge by selecting a vocational, or technology oriented program. There are three popular philosophical approaches to technical education and one non-education technology option. Each approach has different objectives and content reservoirs. The approaches are usually listed under the following titles: Vocational Education, Industrial Arts Education, Technology Education, and Industrial Technology. In a recent survey, conducted by the Graduate Studies Committee of the American Council on Industrial Arts Teacher Education (1986), the content emphasis offered by graduate programs was as follows:

Vocational	= 41%	Technology Education	= 39%
Industrial Arts	= 45%	Other	= .05%
N	= 104	(Wright, 1986, p. 2)	

As can be seen, the graduate programs are evenly split between three major focuses.

Industrial Technology programs (because they are not an education major) were not surveyed, but will be discussed in this chapter because they represent options at some institutions.

#### Vocational Education:

About one third of the graduate degrees are offered in vocational education with a focus on trade and industrial education. The philosophy is centered around the Carl Perkins Vocational Education Act with courses which help students design curriculum, instructional strategies, and supervision plans. Generally, graduates of these degrees work with state vocational education plans which are used in the area vocational school, comprehensive high school, and community college delivery systems. The philosophy is straight forward with the overall goal of employment in one of the technical occupations upon completion. Graduate students will be involved in studying vocational education and conducting research which will help them make contributions to the advancement of work-oriented technical programs.

#### Industrial Arts Education:

Graduate programs with a focus on industrial arts make up about one third of the available choices. The program usually is focused on curriculum design, instructional strategies, facility design and renovation, and supervision of industrial arts departments. The philosophy is centered around technical instruction and career awareness in a general education program. Typically, the curriculum is made up of the technical areas of woods, metals, drafting, graphic arts, power, and electricity/electronics. Most facility planning uses the general shop or unit shop method and the emphasis is placed on industrial processes. Graduate students will continue to study

the philosophy of industrial arts and conduct research to improve the instructional, curricula or supervisory process.

#### Technology Education:

Technology Education is a contemporary approach for industrial arts. About one third of the graduate programs have adopted this approach across the nation. The program usually is focused on instructional strategy, curriculum development, facility design and renovation, and supervisory technique. In addition, special technical laboratory-based classes are offered to update technical knowledge and skill.

Typically, the curriculum centers around the technical areas of communication, construction, manufacturing, and transportation. Facility planning is based on flexible laboratories in the cluster or systems areas. The philosophy is broad-based with an emphasis on a conceptual/systems approach to improve technological and social/cultural literacy. Graduate students will study the philosophy and impact of technology education. Research will focus on new instructional strategies, student activities, curriculum design, and facility plans that will advance the implementation of technology-based education.

#### Industrial Technology:

The term industrial technology at the graduate level is used to indicate a non-education program which focuses on technical and management competencies. It is a degree which is primarily designed for the industrial technology undergraduate student who wants advanced study in methods, quality control, statistics, and production management.

Some industrial arts/technology education students do enter industrial technology graduate programs and are able to work in the classes that help them as teachers. However, the graduate degree in industrial technology does not replace the undergraduate B.S.I.T. degree as an entry requirement for a position in industry as a middle technical manager.

Additional Remarks:

As with the various degrees, the content and philosophy of the various graduate programs may not be as pure as they might indicate. Many graduate programs will have a mixture of the different approaches and allow students to select their area of study. One confusing aspect of the profession is the use of technology education or industrial technology education for a title. If the title Industrial Technology Education is used and focuses on the areas of construction, manufacturing, communication and transportation rather than middle technical management, then essentially it is the same program approach as technology education - a contemporary approach for industrial arts.

Confused? Well that's one of the problems in our profession and one of the reasons students should check the purpose and design of the program.

SUMMARY

The degree designations are important signs of what may be expected from graduate study. Whether students want a research based or a practice based degree is up to them and their future plans. They should not assume that all masters, specialist, and doctoral degrees are the same. Each has a

purpose and different approach. They should try to select one that will meet identified needs and provide an academic challenge.

If philosophy is important, they should ask to see the types of courses used to make up the program. The philosophical approach can affect one's career direction. Choosing the wrong one often results in disappointment and frustration.

Remember, graduate study is an important step in a student's career and represents an outlay of time and money as well as academic effort on their part. Most of the graduate programs in our field are of excellent quality and have a reputation for producing quality graduates. While location, costs, stipends, and acceptance standards may be of primary concern, don't underestimate the importance of quality and program concentration.

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## CHAPTER II

### An Analysis of Content and Purpose of Masters, Specialists and Doctoral Degrees

by

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#### INTRODUCTION

The purpose of a bachelor degree is to gain a general understanding of the industrial arts/technology education discipline enhanced with a broad based core of general knowledge. In addition, specific skills are learned which serve as a baseline for entry into the field. In other words, the undergraduate degree concentrates on the "what and how" of the discipline.

The masters degree allows expansion of knowledge and skills to help students advance into a position requiring higher levels of expertise. They learn the "why and when" of the discipline at this level.

The specialist degree provides students the opportunity to gain additional professional competencies beyond the masters degree. It usually is considered to be a terminal degree leading towards supervision and management positions within a given field.

The doctorate prepares people for college or university teaching and upper level management through further work in such areas as research, evaluation, philosophy, management techniques, and curriculum development. While working on the doctorate, students gain skills and knowledge

which enable them to postulate on the "where to and what if" of the discipline.

The remainder of this section will examine general content requirements for masters, specialist, and doctoral degrees. The data presented were compiled from the results of a survey sent to the institutions listed in the Industrial Teacher Education Directory (Dennis, 1985).

#### MASTERS DEGREES

The masters degree including the Master of Science (M.S.), Master of Arts (M.A.), or Master of Education (M.Ed.), is an indication of advanced educational preparation within a specific area. This usually includes more in-depth knowledge of the discipline than can be achieved within the time and credit constraints of a bachelor degree program. A summary of required average semester credit hours of professional, research, administration/management, and technical courses from the M.A., M.S., and M.Ed. degrees is presented in Table 2-1.

Table 2-1

#### Average Required Semester Hours Credit

Course Emphasis	Program		
	M.A.	M.S.	M.Ed.
Professional	8.3	6.5	6.7
Research	5	4.2	4.1
Administration/ Management	5.9	4.8	6.3
Technical	6.7	12	8.8



Specifically, the professional courses at the masters level expand knowledge in such areas as curriculum development, instructional analysis, history, and philosophy. The number of semester credits for professional courses included in a masters program varied from 0 to 18 semester hours depending on the program. The average semester hours of professional courses for programs offering a M.S. degree was 6.5, while the average was 6.7 for programs offering M.Ed., and 8.3 for programs offering a M.A.

Opportunities also are provided for both education and industry-oriented people to further develop their administration and management skills such as planning, budgeting, organizing, and personnel. The total semester hours of credit in administration and management courses, at the masters level, varied from 0 to 15 depending on the program. The average semester hours of administration and management courses for programs offering a M.S. was 4 to 8 while the average was 5.9 for programs offering a M.A., and 6.3 for programs offering a M.Ed.

Competencies in research methodology, statistical analysis and evaluation, along with other forms of individual scholarships are fostered during a masters degree program. The number of required semester credits in research related courses range from 0 to 9 semester hours depending on the program. This number may or may not include from 3 to 6 semester hour credits for a masters paper, thesis or some other form of scholastic endeavor. The average number of semester hours of research-related courses for programs offering a M.Ed. was 4.1 while the average was 4.2 for programs offering a M.S. and 5 for programs offering a M.A.

Some universities offer advanced courses in the various technical areas associated with industrial arts/technology education. However, in most cases advanced technical courses are not required for a masters program but are taken as electives. In such instances, curriculum development assignments usually are included as a part of an advanced technical course. The total semester hour credits required in advanced technical courses, at the masters level, varied from 0 to 29 depending on the program. The average semester hours for advanced technical courses in programs offering a M.A. was 6.7 while the average was 8.8 for programs offering a M.Ed. and 12 for programs offering a M.S.

#### EDUCATIONAL SPECIALIST DEGREE

The Ed.S. degree is a post-masters program designed to provide the educator with additional skill and knowledge within a specific area of interest. The specialist degree is designed for those who want to advance into counseling, supervisory or administration position and usually, but not always, is considered a terminal degree.

Coursework, for the specialist degree, like the masters degree, varies according to the program. A summary of the average required semester credit hours of professional, research, administration/management, and technical courses for the education specialist degree is presented in the first column of Table 2-2. The professional course credits required for the specialist degree were found to range from 0 to 15 semester hours with an average of 6 semester hours. However, the average required credits in administration/management courses was 13.75 semester hours, which was the single largest concentration of credits found in the specialist degree program. In many cases the

specialist program also includes, in addition to the required coursework in professional, research, and administration/management courses, and an internship or some other form of professional experience within the specific area of specialization.

Even though there are few schools offering advanced technical courses as a part of the specialist degree program, it is not a common practice. Most programs are specifically designed to lead to administrative or management positions, not positions where highly specialized technical training is required.

Table 2-2

AVERAGE REQUIRED SEMESTER HOURS CREDIT

Course Emphasis	Program		
	Ed.S.	Ph.D.	Ed.D.
Professional	6	7.2	7.5
Research	6	13.5	11.3
Administration/ Management	13.75	3.2	4.3
Technical	-	-	-

DOCTORAL DEGREES

The Ph.D. (Doctor of Philosophy) and the Ed.D. (Doctor of Education) are the highest academic degrees conferred by colleges and universities for advanced study within a field of knowledge. They require a proven research capability as demonstrated by the writing, defense, and acceptance of a dissertation. During the two to three years of full-time graduate work, candidates seek advanced understanding of their chosen area of study. A

summary of the average required semester credit hours of professional, research, administration/management and technical courses for the doctoral degrees is presented in the last two columns of Table 2-2.

Requirements for semester credits of professional courses at the doctoral level may differ from 0 to 16 depending on the university and the specific program. The average required semester hours was 7.5 for the programs offering an Ed.D. and 7.2 for programs offering a Ph.D.

Study in research methodology and statistical analysis beyond the masters degree provides knowledge required to complete the dissertation. This may be obtained in the 3 to 23 semester hours of research and statistics courses usually required as a part of a doctoral program. The average for these required courses was 11.3 semester hours for Ed.D. programs and 13.5 semester hours for Ph.D. programs.

It is hoped the dissertation, which is often the initial research effort, will represent a student's first of many contributions to the advancement of knowledge within the discipline. Through such effort the discipline will be better understood and communicated to others both inside and outside of the profession. With the doctorate, graduates should expect to undertake interdisciplinary activities directed towards helping others gain a general understanding of Technology Education's role in conjunction with other academic fields in education.

With the major emphasis of doctoral work being placed on research, philosophy, curriculum development, and administration/management techniques, most universities having doctoral programs do not require any advanced technical courses as a

part of their degree programs. However, with the ever-increasing importance given to administration and management, most doctoral programs are requiring 3 to 6 semester hours of course work in this area. The average number of semester hours of administration and management courses was 4.3 for Ed.D. programs and 3.2 for Ph.D. programs. To emphasize further the need for administration and management skills at this level, several universities now require an internship in industry, government, the public schools, or the university as a part of the doctoral program. The internship is provided to allow students to gain valuable professional field experiences within a specific area of specialization.

Students will find some flexibility and diversity in both content and purpose within most advanced degree programs. Realizing that it was not possible to list the content requirements for each institution, the averages for required semester hours in several content areas have been presented. These averages can be used as a benchmark from which to identify a sound graduate program for an advanced degree. It is most important that students set interim and long range goals, and then choose a program and an institution which will help reach those goals.

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## CHAPTER III

### Requirements of Degrees and Assistantships

by

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For centuries, the Japanese have used an ancient and honorable term for those individuals of great qualities and potential who were looking for just the right place to be of service. The term is "Ronin", and it originally was applied to unemployed Samurai warriors who traveled throughout the country looking for a place to hang their swords. Today, the term is used to denote those students who are in search of an institution of higher learning that will meet their educational needs best. Such students are, indeed, American "Ronins" of the last quarter of the twentieth century.

As students think about their academic future and professional life after the baccalaureate, they begin to search for the graduate program that will help them achieve their objectives. They probably will see a bewildering variety of degrees and programs. There are literally hundreds of different kinds of graduate programs, degrees, concentration areas, and options in our discipline. Good students can look forward to the happy experience of being recruited by several universities. One student said that it was like being a child in a candy store, and wanting to sample all of the candy. Some schools advertise with slick brochures, some have their alumni or graduate assistants actively recruit students, and some just rely on their reputations. Prospective graduate students are buyers in a seller's

market. The question is, how do they, as prospective graduate students, select the school that is just right for them? To answer that question, let's look at the typical degrees and assistantships that are offered. Students will need to learn more about them to make an informed decision about their future.

The following questions represent a synthesis of two kinds of issues that I have encountered as an advisor to graduate students. The first is most often asked by graduate applicants or potential applicants concerning the graduate programs of study, requirements, and assistantships. The second type of question is drawn from what graduates said they wished they had asked before starting their graduate studies. For convenience, these questions and responses are presented as a hypothetical interchange between a prospective graduate student and an academic advisor who wishes to represent the student's best interests:

Applicant: Why worry about the kind of degree I will receive? Aren't they all the same?

Advisor: Not really. There seems to be a "pecking order" in academia, just as in any barnyard or schoolyard. Certainly, some degrees are preferred over others by some people, and particular degrees may have more or less status in the eyes of different people. It all depends upon who you ask. For a career in some professions, it seems to make a great deal of difference what kind of degree you have; that is, what it says on the diploma. For others, it doesn't really matter.

Applicant: Then, what kinds of degrees are available?

Advisor: In the United States there are two major types: (1) the traditional academic degree and (2)

the "tagged" degree. Both are legitimately earned degrees and have value. The traditional graduate academic degrees are the Master of Science (M.S.), the Master of Arts (M.A.), and the Doctor of Philosophy (Ph.D.). The "tagged" academic degrees are more recent developments. They seem to be dedicated more closely to a particular profession or area and are so indicated on the diploma. Some examples are the Master of Education (M.Ed.), the Master of Technology (M.T.), the Educational Specialist (Ed.S.) often called the sixth year program, and the Doctor of Education (Ed.D.).

There are some real and some apparent differences between the degree types. The traditional degrees, (M.S., M.A., Ph.D.) often are considered more difficult to obtain. For graduation they tend to require a foreign language or statistical proficiency in addition to content area and methods courses mastery. They may also require the completion of a thesis or dissertation. As a result, some employers appear to regard the traditional degree in higher esteem than the tagged degree because of the perceived rigor associated with the former type. It has been said, for example, that the Ph.D. is considered more of a research degree while the Ed.D. is a practitioners degree, a purely "American" invention not well recognized all over the world. Similar statements have been made in favor of the M.A. over the M.Ed. or other "tagged" degrees. These attitudes are changing, but they still prevail in many locations. The truth of the matter is that what is substantially the same degree path often leads to the M.S. and M.A. or the Ed.D. and Ph.D.

Applicant: What else makes a tagged degree different?

Advisor: It can be more flexible, both from the viewpoint of the institution and the student.

Because it doesn't have to meet particular requirements of the traditional degrees, a tagged degree program usually is easier to get through a State Board of Education if it can be demonstrated to respond to some real educational constituency. For this reason, many of the "newer" graduate programs are of this type. Some examples are the Master of Education (M.Ed.), Master of Technology (MOT), Master of Industrial Technology (MIT), and Master of Engineering Technology (MET). There is now even a Doctor of Industrial Technology (D.I.T.) degree available.

From the student's point of view, the tagged degree can provide some flexibility needed to address specialized content courses or areas of study that will help reach particular professional goals.

Applicant: But how do I choose the right degree?

Advisor: That's the rub. In a profession that traces its roots to manual training and industrial arts, we have come to accept a certain amount of uncertainty about nomenclature. The proliferation of degrees is evidence of this, and suggests that we should pay more attention to the nature of the curriculum than to its name. Many students seem to be very concerned about the designation of the degree that they receive. They want to know just what the diploma will say. There probably is some justification for this because the degree will be there forever, and no student wants to feel compelled to continuously explain and defend a graduate degree that nobody else understands. On the other hand, you should remember that the degree itself only opens doors; the knowledge and ability that you gained will contribute more to your professional success than what the sheepskin says. This means that to make a good choice you need some additional information.

Applicant: Such as?

Advisor: For starters, you need to know more about the nature of the program that you are considering. Here are some questions you should ask the graduate advisor when you look over a program that interests you:

1. How long will it take to complete this program?

Here again, there is a great deal of diversity. A lot depends on you, but there are some general rules. Some masters programs can be completed in one year, and some may take 18 months to 2 years depending upon where you start. Doctoral programs may take two to four years. If you already have a masters degree, you probably are looking at two to three years. Some schools accept students with a baccalaureate through a three or four year doctoral program immediately after graduation. The length of the program may be a rough index of the program's quality, but this is not always true. Some schools (sad to say) try to hold on to graduate students because they represent a source of cheap labor. Others try to run them through very quickly. Neither approach is very good for the students. You should probably spend enough time in a graduate program to get adequate preparation for what lies ahead. A "degree mill" may be easier to get through, but will develop a bad reputation eventually that could hurt you after you graduate. If possible, you should avoid schools that are at both extremes. Look for a solid program of study from which you will gain the greatest amount of value in the time available.

2. How many hours does the graduate program contain?

For clarity, we will use semester hours. Masters programs usually involve from 28 to 36 semester hours and a thesis or another activity may be added to or included in this. Specialist (sixth year) programs vary in their requirements. Doctoral programs may contain from 48 to 60 hours, exclusive of the dissertation. But that is just part of the story. What you really need to know is: (1) how many hours are required, (2) what courses are required, (3) which courses are elective, (4) how to take advantage of independent study or practicum hours. It's usually best to ask to see a sample program of study and compare it with your professional goals and available time.

3. How many hours are required and how many are electives?

This is a sensitive question. In general, you want a program that prescribes a significant amount of work in the area of your professional interest, and allows you participating in planning. Beware of either extreme: the lock step program or the one that is too open ended. It is a good idea to ask the graduate assistants what kind of mix they have encountered between required and elective courses and how they have been advised through their program. Most students favor a program of study that involves them as active participants in planning their curriculum.

4. What is a typical academic load? A full-time course load?

Many schools require students or graduate assistants to take a minimum number of hours or a "full load" of 12 to 15 semester hours. This can be important if you plan to be a graduate assistant and you know that your time will be divided

between work and study. You will have to carefully parcel out your schedule to get it all done.

5. What can I do with this degree?

This is an important question. Do not accept an evasive answer here, press for specifics. The general rule is that for a graduate program to be useful to you, its recent graduates should be in positions that appeal to you, and they should not have had to get there "through the back door". You are going to put a lot of time and energy into a graduate program, and it should provide you with a pretty clear vision of the career ladder that you want. Look for employment trends among program graduates. Are they in leadership roles? Does the school follow-up its graduates regularly to ensure quality in the graduate program?

6. What about the qualifications of the faculty?

This may seem like a presumptuous question from your point of view, but it is something you have every right to ask! You are making a sizeable investment in an institution and are entitled to know about its faculty. You need to know if they will have the professional credibility to help you. Are the faculty educators? Are they engineers? Are they researchers? How many have the terminal degree (Ph.D. or Ed.D.)? Have they had industrial experience? You might be concerned about the research capability of your professors. Look at some of their publications. Are they data based research articles in refereed journals, or are they "wisdom articles" that contain broad educational philosophies? Each kind of publishing has its place. You should want background information about the faculty who will teach you, and the kind of research they do.

7. Is a doctoral program in your career field available at that institution?

If you are seeking a masters degree, you might want to ask this question for at least two reasons. Perhaps you want to keep your options open for pursuing the doctoral degree at the same institution after completing the masters degree. That's okay, but it is not the best reason for asking this question. The bottom line is that where doctoral programs exist in your area you will find a larger critical mass of faculty who are dedicated to graduate studies. You will have a larger number of experienced graduate mentors to learn from and to choose from when selecting your committee. Finally, you probably will find that doctoral studies and a large graduate faculty are associated with a larger number of funded research projects capable of financially supporting graduate students.

8. Is the course work that I want available now?

If your career plans require a specific technical competence, be certain that what you want is available before you enter the program. There is often considerable leeway in the way independent study courses are titled. Faculty may agree to work with you if you are doing some project that is of interest to them, or they may channel your efforts in that direction. As a result, your activity could be only loosely related to what is on the transcript and you may not receive the breath of technical knowledge you need.

If you can avoid it, don't settle for a "boot-leg" program or a promise of independent study in technical areas. Some independent study is fine, but not for the bulk of your technical knowledge. The reason for this is that in the university

system, faculty work with independent study students is often not well rewarded.

Here are some additional questions you might want to ask the graduate students about the course of study:

\* What is the course work advisement system like? How are your professional needs considered? Is the school's need a primary motivation in advisement of students to classes? These questions all relate to the way that you are advised to take courses throughout your graduate program. Some schools may have a written agenda to guide students into courses that will benefit the enrollment pattern of the department rather than considering the best interest of each student. Find out how hard it is to take courses outside the department if they are related to your professional goals.

\* Are you ever asked to sign up for bogus courses? Believe it or not, some schools have their graduate students or graduate assistants sign up for bogus courses to pad the number of FTE (full-time equivalent students) enrolled in the program. Beware of schools that pad transcripts this way.

\* Does the administration listen to needs, problems, and ideas of graduate students? Do you feel like you are part of the decision-making process? Graduate students and assistants are the life blood of many good programs. But they often feel like their status is one of convenience and that they are treated like faculty or students at the convenience of the system. Whether this is true or not, it is a concern. Graduate students should be a part of the decision-making process in name and in fact. It is the best way I know for the institution to meet your needs.

\* Do faculty members bring ideas into the courses that you can use in your profession? Are they interested in you as students? Faculty that bring useful and practical ideas into the instructional process often are valuable long term professional resources. Current graduate students will know about this, and about the usefulness of required course work.

\* Do faculty treat you like colleagues? Graduate students and assistants in the better, more powerful programs, often feel more like colleagues than students. This isn't always true, but knowledgeable students tell me that is another good criteria of program quality.

\* Is some individual charged with coordinating the graduate program? If so, it could be an indication that the graduate program has high visibility and a good reputation on campus.

### Assistantships

The second section of this chapter deals with assistantships, those vehicles of financial support that have gotten many good graduate students through the monetary wilderness of graduate school. It is possible to have enough funding to be comfortable while in graduate school. In fact, I know of some students who left school with money in the bank because they knew the rules of the assistantship game.

### That's great! What do I need to know?

First of all, you need to know about fellowships and assistantships. Fellowships are grants of money that are given to students to help them with graduate study. Assistantships usually refer to job assignments for which graduates are paid.

In both cases, the money received by the student is called a stipend. Stipends usually are paid monthly by the college or university.

There are two kinds of assistantships: teaching assistantships and research assistantships. Each has its advantages and disadvantages, as well as psychological and physical rewards. Either one may be better for your particular needs and circumstances. Teaching assistantships require the student to teach classes (usually undergraduate classes) in return for the stipend. The teaching assistantship (T.A.) may work as a laboratory assistant or have full charge of a class. The number of classes taught is related to the time assignment of the assistantship, which might be 1/4 time, 3/8 time, 1/2 time or even in some cases, full-time. The work hours of each level of assistantship are usually equivalent portions of a 40 hour work week. Thus, a half-time graduate teaching assistant has around 20 hours of work assignments each week, and may teach 1 or 2 classes. Needless to say, this could take more than the advertised 20 hours. Teaching duties might include writing lesson plans, delivering lectures or supervising laboratories, preparing tests, and evaluating student work. This may be coupled with carrying a full academic load of 12 semester hours at the same time.

Courses may be assigned so that the experience of teaching them enables the T.A. to grow and develop professionally. On the other hand, undesirable courses may be assigned to the T.A. because students don't like them nor does the faculty like to teach them. Usually, T.A.'s receive a real learning and growing experience. A major disadvantage is that the work assignment could conflict with course work in which they wish to enroll. If this happens you can hope that your college or university views you as a student first



and an employee second in the way it responds to your problem.

The second kind of assistantship, the research assistantship, is a work assignment in an ongoing research study or project. Sometimes these projects are funded by the university and sometimes they are supported by outside agencies. Projects that have internal funding, especially those that are ongoing year after year, are said to be funded by hard money. While the work hour assignments on paper may be similar to teaching assistantships, research assistantships (R.A.'s for short) often are desirable because they permit "double dipping". That is, graduate students on a research assistantship may be able to work in an area that is related to their anticipated career field. They may be able to conduct research or write for publication in the field while being paid. In addition, the student may be able to build a thesis or dissertation out of the work assignment and even get some financial support for the research activity.

Another advantage of the research assistantship is its flexibility. A research assistant may be able to organize the work assignment easily around classes and other academic activities because of the nature of the research project. If this is important to you, explore the research assistantship possibilities.

Do all schools have research projects that can support graduate students?

No they don't. This is another rough index of program quality; the better programs tend to be more active in research and projects. It's a good idea to ask about what kind of projects have been conducted recently, and those that are being planned. Be sure that the same professor (or

professors) who got the original grants in previous years are still there. If not, continued funding may be in jeopardy. Ask whether there is a doctoral program in your specific career field at that university. Schools with doctoral programs usually have more grants and longer lasting grants.

But what about fellowships?

Some say that these are the real plums because they often do not require students to work in return for their stipends. Like assistantships, they may be internally or externally funded. Some are called "non-service fellowships" and are confined to doctoral programs. Some examples are the old E.P.D.A. (Education Professional Development Act) and V.E.L.D. (Vocational Education Leadership Development) grants. Although both kinds of grants were available at the masters or specialist level, most recipients tended to enter doctoral studies. Some other important characteristics of fellowships are that: (1) many of them are not taxed as ordinary income (check with your tax advisor); and (2) recipients may not be allowed to accept other employment while in school. For purpose of clarity, remember that some schools may refer to fellowships as assistantships, and vice versa. Be sure you understand labels.

What are the Questions I Should Ask About Assistantships and Fellowships?

Some important ones are as follows:

1. How much will that assistantship pay?

The answer to this one depends on several things. The pay rate is usually related to the amount of time in the work assignment (1/4, 3/8, or 1/2 time). A good rule of thumb is to compare

the pay rate to what you could earn elsewhere with equivalent effort. If you already have some experience, you might not need a teaching or research assistantship as a learning experience. In that case, a financial comparison would be important. In making a decision, remember that some assistantships include free tuition or a waiver of out-of-state fees as added "perks". Such a waiver increases the real dollar value of the assistantship.

2. What level of assistantship will I receive?

There is a considerable stipend difference between a 1/4 time and 1/2 time assistantship. Try to determine where the openings are for graduate assistants and how much time is budgeted for an assistant in each of the areas where you might work. Remember that most assistantships are part-time. They include no fringe benefits (e.g., retirement, medical expense, etc.), so you will have to finance these yourself.

3. How many courses will I teach (or, how many hours will I work)?

Typically, a 1/2 time assistantship involves about 20 hours per week and is equivalent to a 1/2 time job. It also equates to teaching two courses. Some universities offer full-time employment (sometimes known as research or teaching associateships, or instructorships) to the better or more advanced students. These full-time T.A.'s may teach the equivalent of up to 4 courses. If you can afford the time, the larger assistantships are more financially rewarding. The real question is "how many courses will I have to teach to get a given assistantship"? The general rule is 1/4 time = 1 course equivalent, 3/8 time = 1-1/2 course equivalent, 1/2 time = 2 courses equivalent, and so forth.

4. Who will be my advisor?

This is one of the most important questions you could ask. The total professional student growth depends largely upon the faculty supervisor you have and the kind of mentoring that faculty member gives you. Remember that faculty members differ widely in the utilization of graduate assistants. Some work very hard to help their graduate students learn and grow. Others show them the classroom and disappear. It is very important to meet the faculty member to whom you will be assigned before accepting the assistantship. You should be comfortable working with that faculty member. Here, again, you should talk to current graduate assistants. They can be a big help. They know which professors are helpful and which ones should be avoided. Remember that you are there to learn and complete a graduate program. You shouldn't have to learn a completely new job on your own at the same time--there'll be plenty of time for that later.

5. Is there a formal graduate assistant advisory group or council?

This is an excellent way to evaluate the relationship between the graduate assistants and the administration. You will need to determine how the graduate assistant problems, questions and views are perceived by the program's administration. Ask the graduate assistants if there is such an organization. Talk to the president (or chair) and some of the advisory group members. Ask them whether their suggestions are seriously considered. Think about whether you would like to serve in that kind of a leadership or committee position with that organization.

## 6. What are facilities like?

Graduate assistants may have the use of a wide range of facilities that include private or semi-private offices, office areas or suites for a group of assistants, or individual study carrels. This is usually a matter of local policy and allocation of funds. You will want to see the graduate assistant office area at the school and look at how much work space is allocated for each individual graduate assistant. You will probably spend many hours in this office area, so check it out to be sure that it is adequate.

While I'm on the subject of facilities, it's important to learn something about the instructional facilities that you will be using. Are the laboratories clean and up to date? Are they large enough for the number of students to be taught? Is the equipment up to date? Are the classes well organized? Will you have instructional support? How about access to typewriters or computers for preparing tests, lesson plans, and typing research papers? These are some of the questions that you will want to ask the graduate assistants.

## 7. How is the instructional scheduling handled?

This question has implications for your academic coursework. If the course scheduling is set before you find out what and when you will be teaching, and if you find out what your course assignment is the week before classes start, there may be some problems. A good deal of interaction and planning should occur with the faculty so their teaching schedules can accommodate your academic schedule.

## SUMMARY

The questions and issues that have been posed in this short chapter do not cover all of the areas you should investigate as you seek the right graduate program, nor do they intend to do so. However, they do represent the kinds of questions most often posed to the author by graduate students. Also included are questions that veteran graduate students or program graduates said they wished they had asked before selecting a graduate school. With some care and planning, you can interview students to (1) help identify the right kind of degree or certificate program for you, and (2) select an assistantship environment that will add to your academic growth, development, and, in the long run, to your professional success. Let us hope that like the best of the Ronin of old, you will find the right aggregate of social, cultural, and educational conditions to help you achieve your goals.

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CHAPTER IV

Financing a Graduate School Education

by

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The first step toward achieving an advanced degree is having a definite goal. It could be at the masters, specialists, or doctoral levels. Reaching that goal must include planning and probably some financial assistance.

Planning begins well in advance of entry into any program. It should involve the accumulation of past academic achievements, records of professional leadership, and recommendations. A high grade point average in an undergraduate program is important. So is an established record of professional participation and publication along with letters of support from former teachers, employers, and others is also suggested. Some of this information is required when applying for a degree program at the institution of your choice. These kinds of documentation often are expected by funding agencies to which students apply for financial assistance. Agencies that provide funds are interested in supporting a person with a good "track record".

FULL-TIME STUDENT FINANCIAL ASSISTANCE

Financial aid needed to pursue a graduate degree full-time is generally found in three forms: employment, loans, and fellowships. Employment includes one or more forms of commitment. An employee within the college or university is

expected to help meet some of its operational needs. Students might be teaching courses, serving as a laboratory assistant, or engaging in research projects. They could be participating in a work-study program or hired as a student employee. Outside the university there are possibilities of internships. The student attends class part of the day and is employed for the remainder. Loans are based on student needs and availability of funds within the lending institution. There is a contract expecting repayment to begin shortly after graduation or withdrawal from the program. Fellowships (sometimes called grants or scholarships), on the other hand, mean that students are funded on the basis of past and present performance, expressed needs, in addition to a well-defined goal.

#### Employment

Employment of students at a college or university usually is an annual commitment for some amount of time each week. It may vary up to 20 hours which is typical for a full-time graduate student. Students may be classified as a Graduate Teaching Associate (GTA), Graduate Research Associate (GRA), or Laboratory Assistant (LA). For their services they may receive fee waivers and/or a stipend. Either in-state or out-of-state tuitions and instructional fees are included. Stipends differ according to the degree being pursued. During this time students must enroll for a specific minimum number of credit hours of coursework and/or research.

The GTA will be assigned one or more courses to teach. Students work for the department, program, or whoever provided financial support. Generally, they are provided with a course syllabus. They will be responsible for preparing instructional materials, presenting lectures, super-

vising laboratory experiences, making assignments, and evaluating students in undergraduate courses. Teaching assignments are usually compatible with prior educational background and experience. However, changing curricula and instructional needs may change the situation.

A GTA has the same professional liability as any other faculty member. This may or may not be paid by the hiring institution.

A GRA is hired to participate in research projects and to work with a project director who is a senior faculty member. The project may be a budget line item for on-going research and development at the institution. It could be a so-called "soft money" project for which the project director submitted a successful proposal to a funding agency. Activities may involve conducting the study, collecting and analyzing data, and making a final report to the funding agency.

The LA may help students with laboratory activities, order materials and supplies and/or maintain instructional equipment. This individual usually is responsible to the department chairperson.

A work-study program is a source of federal funds for graduate students through the educational institution. Employment varies from 10 to 30 hours per week while classes are in session. Sometimes full-time employment is available between quarters or semesters. There are a number of restrictions for this program. Students must have been accepted for, or enrolled in, a graduate school program with an annual income below some level that varies across the country. Money is paid only during the time of enrollment (each quarter or semester). Only educational expenses

are paid if there is no stipend.

Students may become regular employees of the college or university. They must compete for jobs through the personnel office of the institution. A financial need does not have to be proven. However, they are expected to maintain their student status.

Internships, where available, are part of the student's graduate studies. This activity provides practical experience in some related professional development. A coordinator at the educational institution helps negotiate wages and determine time commitments with the enterprise.

### Loans

There are two forms of student loans: long term and short term. Information about them typically is available at the financial aid office in the college or in the university. There is long term financial assistance through guaranteed bank loans or the national student loan program. Bank loans are based on academic achievement and negotiated with local lending institutions that normally plan an interview with the loan recipient. National student loan program eligibility depends on financial need and academic record of the applicant. Repayment of either form of funding begins after the degree is received or the student withdraws from the program.

Short term loans may be made on a quarter or semester basis by the college or university. They are more for the individual who is confronted with some unexpected debt. Repayment usually occurs within a year of when the loan was obtained.

### Fellowships

Fellowships, like loans, require little or no imposition of student's time. Students are expected to study diligently and earn acceptable grades in order to continue qualifying for the grant. The student may have a commitment to report his/her status to whomever is underwriting the graduate education.

Financial assistance, through fellowships, comes from national, state and local philanthropic foundations, interests, and organizations. Often, these are not requested by potential students because the individual fails to take the initiative to find and apply for them.

There is a Graduate Student Grants Directory, published annually by the Office of Research Affairs, Graduate School, University of Massachusetts, Amherst, MA. It describes interdisciplinary study listings as well as subject matter areas of potential financial resources. Some interdisciplinary categories are graduate students in general (in the United States and abroad), minority students, post-doctoral scholars, study by travelers, and summer student learning experiences. Among the subjects for study are agriculture/foods sciences, arts/humanities, behavioral/social sciences, education, engineering, health/safety, management/commerce, and science and technology/mathematics/computer science. Within these broad categories are more specific sections. Each section then identifies specific funding agencies. The address of each organization is given along with the program, eligibility, amount of subsidy, application procedure, and deadline. These usually are one-year funds with some being repeatable. This directory is generally available for review in graduate study offices in universities offering such programs.

These same offices have state and local listings of organizations that will finance graduate studies. Like the directory listings, some programs are interdisciplinary while others are for specific disciplines. Local listings, for the most part, are funded within the graduate program of the college or university. Terms like "university", "special", "minority", and "presidential" help identify categories. There also are individuals who have bequeathed legacies for young scholars. The source of those funds usually bear the name of the donor.

Funding is available for graduate students who may or may not be receiving full-time financial assistance. This refers to grants specifically for dissertation research. If the student selects a topic in which a funding agency has an interest, he/she could submit a proposal to the organization through the local graduate program office, and seek funds for such items as experimental equipment, travel and communications. These resources may come from state and local groups as well as those in the directory.

#### PART-TIME STUDENT FINANCIAL ASSISTANCE

Little financial assistance is available for part-time students. Teacher education is one of the few fields where this is a possibility. Another is industrial support for employees wishing to upgrade their knowledge and skill levels.

Support for graduate teacher education is in the form of an exchange-of-services agreement. In other words, undergraduate students preparing to enter the teaching profession spend much time in local schools gaining field experience. For

this, the school district is granted fee waivers. Teachers within that district can apply for these waivers to pay tuition to the local university on a per-course basis for graduate degree programs.

Within industry, students can be reimbursed for courses they complete. These usually lead to promotion within the organization.

#### SUMMARY

Financial assistance for graduate studies is highly competitive. As a result, individuals pursuing a masters, specialists or doctoral degree must present the best possible resume, records of academic achievement, professional dedication, and financial need in order to be considered. Once assistance is granted, there is the necessity to maintain acceptable progress towards the individual's goal. Students either work for the educational institution, borrow money for their studies or are successful in competing for fellowships with financial support.



## CHAPTER V

### Assessing the Credentials of Graduate Faculty

by

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Faculty members play pivotal roles for learners at all educational levels. Graduate faculty members, because of their close association with a relatively small number of students over a comparatively long period of time, are vital to optimal student development. It is much more difficult for prospective graduate students to assess the qualifications of graduate faculty than to obtain data about degree requirements, part-time employment opportunities, numbers of degrees granted, and physical facilities available for graduate study research.

Faculty members may be assessed on their performance as teachers, researchers, contributors to their profession, and as advisors or mentors. Within each of these areas, several criteria indicate excellence in faculty performance. Detailed information is not always readily available; the prospective graduate student frequently must resort to individual research to obtain adequate data.

#### Teaching

As prospective students seek to assess teaching performance, they should visit the campus; meet with faculty members and observe their classes, review textbooks, syllabi, resource materials and discuss perceptions of faculty teaching performance with current graduate students.

In some cases, faculty members in other departments or colleges, the dean of the subject matter college, and the dean of the graduate college may be useful sources of information. (It usually is best to call for appointments, since it's difficult to contact people in their offices with free time to talk to prospective students.)

Among the questions which may be asked are these:

1. Who teaches the required courses?
2. What are the qualifications of these individuals for teaching these courses?
3. What teaching techniques are used?
4. Is an adequate variety of text, reference, and resource materials available through the library, bookstores, and faculty departmental collections?
5. Are syllabi and other materials available in advance?
6. Do faculty members revise courses regularly?
7. What is the reputation of graduate faculty members among current graduate students?
8. Are professors from outside the department involved in teaching specialized courses in the program?
9. Is there evidence that professors across campus are aware of and involved in the graduate program?

10. How are contemporary trends and issues handled?
11. Do faculty members in the department hold one philosophical position or do they represent different points of view?
12. What new courses are planned? When will they be available?
13. What opportunities are available for faculty updating, renewal, and retraining?
14. Taken collectively, does the faculty have adequate technical and professional expertise across the range of required and elective courses?
15. Are faculty resumes available to review? What do they report?
16. What ratings do faculty members receive for their effectiveness in lecture, discussion, seminar, and individual instruction?
17. Do faculty members make themselves available for discussion of assignments and course-related topics?

#### Research and Funded Activity

Graduate faculty members are expected to engage in research and scholarly activity in their areas of expertise. In the process, they frequently serve as mentors for graduate students. Graduate faculty members are responsible for advancing knowledge in their field, disseminating research findings through publications, and con-

tinuing involvement in ongoing dialogues among scholars in the field. Much of the vigor of a graduate program is related closely to the scholarly productivity of its faculty. Criteria in assessing the research performance of a graduate faculty include answers to these questions:

1. What kinds of research activities are being conducted?
2. What topics are represented in the faculty research program and publications?
3. What kinds of activities are anticipated in the future (especially during the anticipated time of graduate study)?
4. Are all graduate faculty members actively involved in research and scholarly activity?
5. What publications report recent research activities of the graduate faculty?
6. Are graduate students involved in faculty research activities?
7. Do students co-author publications with faculty?
8. What sources of funding support scholarly activity? How much funding is available?
9. Are the research activities at the "cutting edge" of the profession?
10. Do research and funded activities frequently result in papers presented by graduate students and faculty at meetings of professional societies?

## Service

Graduate faculty members carry a heavy service responsibility in most settings. They serve professional organizations in leadership positions and provide a wide variety of services to educational institutions, organizations, business and industry. Answers to the following questions help identify criteria which may be considered:

1. What professional organizations do graduate faculty members serve?
2. What offices do they hold?
3. Are these activities relevant to the planned graduate study?
4. Are graduate faculty members involved in significant committee activities and leadership positions on campus?
5. Are faculty members actively involved with student organizations?
6. Do faculty members serve as consultants to business and industry?
7. Are faculty consulting activities considered a strength or a problem by current graduate students?
8. Are graduate students offered opportunities to participate in consulting activities?
9. How are service activities supported by the department?

## Advising

In addition to the traditional teaching, research, and services roles expected of university faculty members, graduate faculty members serve in advisory or mentoring roles as well. The closest professional relationship which may be expected during a graduate program is that between graduate student and advisor. Questions which may be considered in assessing this component of graduate faculty performance include these:

1. Who are possible candidates for advisor?
2. How are advisors selected or assigned?
3. How well do these individuals work with graduate students?
4. How available are they to their advisees?
5. How many advisees do they currently have? Are they willing to assume additional advisorships?
6. What are the interests of the advisors? What have they written?
7. What has been the track record of their advisees who have graduated?  
  
What positions do the graduates hold?
8. What do these graduates say about their experiences as graduate students?
9. How well do the advisors work with other members of advisory committees and the graduate faculty?

10. How willing are the advisors to help students meet institutional requirements?
11. How well do the advisors know the job market at the present and in the foreseeable future?
12. How effective are the advisors in supporting advisees throughout graduate study?

### Summary

The prospective graduate student should give careful attention to activities of graduate faculty in teaching, research, service, and advising. While it is difficult to assign specific weights or value to these four different roles, it is important that all roles be filled adequately if the graduate study experience is to be valuable, satisfying, and appropriately challenging.

Campus visits, review of faculty research and publications, interviews, and correspondence will provide useful data on faculty qualifications. Careful attention to the criteria suggested here may enhance the objectivity of a decision to select a specific graduate program over other possible programs.

## CHAPTER VI

### Mentoring -- Is It a Factor to Consider?

by

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"No!"

"You bet!"

"What is it, anyway?"

The alternative answers to the question that serve as a title to this chapter are many and somewhat varied. This author tends to be aligned with the second response: "Mentoring -- is it a factor to consider? You bet!". But rather than take one person's word for it, students should form their own opinion as to what a mentor is and the role a mentor might play while pursuing a graduate degree.

Mentoring is not a new concept. In fact, as Edlind and Haensley (1985) point out, it is a concept that may well have originated from Homer's epic, Odyssey. Mentor was the wise, old friend of Ulysses who was entrusted with the education of Ulysses' son Telemachus. Mentor was more than an educator, he was Telemachus' advisor, guardian, and even surrogate father. Mentor's name has been handed down through the ages to describe teacher, guide, or trusted counselor.

The importance of the role of a mentor also is a concept that has sustained through the ages. As Hennecke (1983) reminds us, Sophocles wrote in his Greek tragedy Antigone:

The ideal condition would be, I admit, that men should be right by instinct. But since we are all likely to go astray, the reasonable thing is to learn from those who teach. (p. 36)

Much research has been conducted on the subject of mentoring. However, a great deal of that research was done to explore educational strategies for the gifted and talented. More recent analysis into such research reveals that findings from talented and gifted literature are closely aligned with the findings within academe and business. (Kram, 1985)

Although mentoring is not new, its acceptance is renewed by colleges, universities, and large businesses as a major component of career development and successful advancement within a chosen profession (Gerstein, 1985).

Within academe mentoring most often occurs in the informal sponsorship that a graduate student receives from a senior professor during graduate school. The mentor provides academic advice, a role model, and assistance in gaining access to the profession. A mentoring relationship usually results in the mentor's protegee, the graduate student, finding employment closely tied to the associations and professional contacts of the mentor (Blackburn, Chapman, & Cameron, 1981).

#### GIFTS TO PROTEGEES

Having a mentor while in pursuit of an advanced degree would seem to have advantages for prospective graduate students. To explore those advantages, mentoring research reveals the "gifts to protegees" (p. 56) that result from a relation-

ship with a mentor. (Edlind & Haensley, 1985) The gifts may vary, as do personal relationships. There are some, however, that remain consistent: career and interest advancement, increase in knowledge and skills, enhancement of self-esteem and self-confidence, development of a personal ethic or set of standards, and establishment of a long-term friendship (Edlind & Haensley, 1985).

#### Careers and Interest Advancement

Mentors provide an experienced resource for career-related inquiry. Through experience involvements and professional contacts, mentors can provide career planning and contact with influential people within the protegee's career field. (Collins & Scott, 1978) Regardless of one's academic expertise or knowledge in a technical area, often the first step toward a career beyond graduate school is initiated by contacts made through a mentor. These crucial contacts may occur when protegees attend professional meetings or conventions with their mentors. In turn, career advancement takes place through increased visibility in professional activities and a word or two of praise or support from mentors.

#### Increase in Knowledge and Skills

According to Moore (1982), the mentor watches for gaps in the protegee's knowledge or skill and then suggests, "You ought to do this. I'll show you how" (p. 24). Knowledge and skills learned from a mentor are not necessarily those of a book-learned nature. Moore (1982) describes them more as inter-personal knowledge and skills, such as how to work with people, how to respond to various work situations, how to analyze problems, and the proper conduct and action at professional meetings. One protegee interviewed by Edlind and

Haensley (1985) stated:

The knowledge I treasure most is what I gained from watching professionals in my discipline doing their jobs, seeing them respond under pressure, utilizing their skills and reaping small rewards from the job. This is something I could never have extracted from a textbook or a month of lectures. (p. 56)

#### Enhancement of Self-Esteem and Self-Confidence

According to Johnson (1980) and concurred with by Moore (1982), individuals who have had mentors report a higher self-esteem and an increase in self-confidence as a result of their relationship with a mentor. Mentors often treat their proteges as esteemed colleagues when in the presence of others. Mentors may show confidence in their proteges tackling a task that the proteges themselves did not realize they were ready to undertake. Mentors often share the work and the glory of a research project or writing endeavor with their proteges. All of these are major contributing factors to a graduate student's self-esteem and self-confidence.

#### Development of a Personal Ethic or Set of Standards

Moore (1982) describes mentoring as "a special kind of socialization" (p. 28) for the protegee. Mentors actually may assist proteges in forming their own philosophy or personal ethic. This process may occur as a result of a challenge to proteges where they continually defend their position on an issue, their reporting of research, or their manner of handling a given situation. Development of a personal ethic or set of standards may also occur as an emulating process. When proteges see behavior they admire in their

mentor they are likely to adopt the behavior for themselves. Schmidt and Wolfe (1980) describe this situation in terms of a mentor acting as a role model. They define a mentor as one who "can illustrate how a professional behaves as well as what a professional does" (p. 46). By observing and learning these standards of professional behavior, graduate students develop their own.

#### Establishment of a Long-Term Friendship

Mentors and proteges usually develop a very special kind of friendship. It is a bond that goes beyond professional association into a personal interest. Mentors usually will follow the personal lives as well as career successes of their proteges after they graduate. Likewise, proteges continue for years to seek the advice of their mentors and to check on their well-being. The mentor/protegee relationship is focused on individuals -- a dialogue of concerns, interests, and goals that go beyond those involved with a common profession.

#### ADVICE TO POTENTIAL PROTEGES

With the increase in popularity of the mentoring concept, many graduate students, old and new, are rushing to find a mentor. Some go as far as to ask senior professors directly "Will you be my mentor?" (Lea & Leibowitc, 1985, p. 35). This approach is considered less than desirable. Lea and Leibowitz (1985) in their article "A Mentor: Would you know one if you saw one?" offer some suggestions to potential proteges. This advice should be of particular interest to graduate students in search of a mentor to guide their studies and their academic careers.

- Let mentoring relationships happen naturally. Students cannot force themselves on someone and expect a workable relationship to develop every time. Through contact during coursework and departmental activities, mentors and protegees identify one another as compatible and then seek out one another.

- Don't look for perfection in a mentor. Accept what a mentor can offer effectively and be satisfied with those contributions. Although those contributions may be few at first, additional contributions develop as the mentor/protegee relationship develops. Few mentors provide all of the mentoring functions of teaching, guiding, advising, counseling, role modeling, motivating, etc.

- Don't feel locked-in to one person for direction. Having a single mentor is not always the most beneficial. "Different mentors can perform different mentor behaviors. One may counsel, another sponsor, and so on" (Lea & Leibowitz, 1983, p. 35). More than one mentor might form the perfect combination to meet individual needs.

- Communicate goals and ambitions. Informing a mentor of one's personal life will strengthen the relationship and help add direction to the mentor's advice. Ambition and enthusiasm are appealing characteristics and often can ignite the same spark in a mentor.

#### IN CONCLUSION

As a graduate student, having a mentor offers a number of positive experiences. However, mentoring is not the type of relationship that can be forced or predicted. Each relationship is as unique as the people involved.

Every graduate student needs support from outside sources. Trying to be self-supportive and self-directed constantly can lead to frustration and discouragement. Kram (1985) illustrates the relationships many people rely on for support. (See Figure 5-1) Although mentors are but one of those supportive relationships, the literature reveals that relationship as important and beneficial.

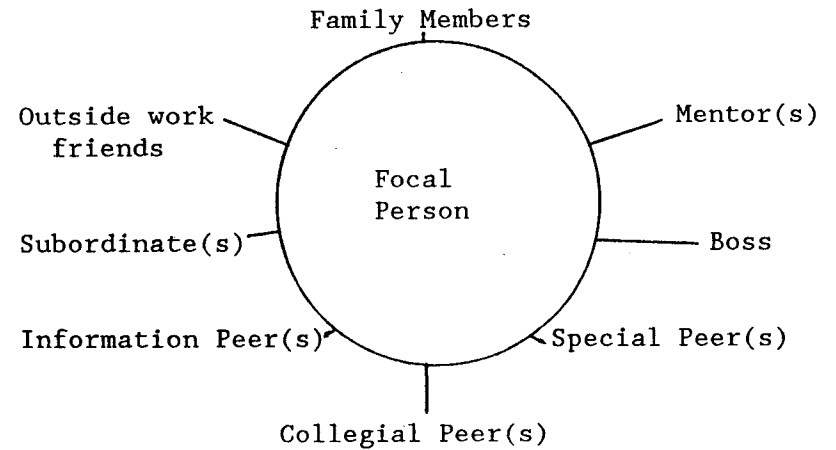


Figure 1. THE RELATIONSHIP CONSTELLATION

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## CHAPTER VII

### Professional Opportunities After Completing A Graduate Degree Program in Industrial Arts/Technology Education

by

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Meeting the requirements of a graduate degree program in industrial arts/ technology education helps to prepare students for various professional opportunities as leaders in the profession. In many instances, the opportunities will be associated with career advancement, such as promotion to local or state supervisory positions as well as becoming a teacher educator. Whether the student enters the graduate program to become a master teacher or to prepare for other leadership positions, it is important to be aware of the range of opportunities available after completing the degree. The following positions that require a graduate degree are listed to give a representative sample of the types of opportunities that are available to those who complete a graduate degree. The positions listed are only suggestive of the types possible and do not attempt to list every possibility.

#### Master Teacher

Preparing teachers through undergraduate programs is at best an introduction to teaching. Only entry level skills and knowledge can be developed in the four years allotted to preservice teacher education programs that lead to the bachelor's degree. Therefore, many of the skills of teaching, curriculum development, student and



program evaluation and so forth, must be developed and enhanced on-the-job or through graduate degree programs.

The recent education reform movement has given support to the concept of the "master teacher". The master teacher is a professional educator who has attained excellence in communicating with the evaluating students. The intent of identifying master teachers is to allow for career advancement and recognition within the teaching profession. For too often teachers think that career advancement only comes through a move into school or state administration or university teaching.

While the master teacher concept has received some national attention, it is not the practice in every state. Where it is being adopted, one of the criteria for a master teacher is the completion of a masters degree. Of course, the education specialist degree or the doctorate meet the education requirements for master teacher.

The need for "master" industrial arts/technology education teachers continues to show a strong demand. A general shortage of teachers is pending. That will open up employment opportunities for new teachers. Often school districts will prefer to hire new teachers without the master's degree because the pay scale is lower for the bachelors degree. However, this is changing somewhat. With the movement toward excellence in education more districts are seeking experienced teachers with the masters degree.

#### Local Supervisor

To become a local supervisor for industrial arts/technology education, most states require a supervisory or administrative certificate or endorsement. To obtain a certificate or endorsement

most states require a graduate degree which specifies courses in education administration and supervision.

Local supervisors have various job responsibilities including supervision of teachers, curriculum, and facilities. Supervisors may have responsibility for processing orders for equipment and supplies and providing input and recommendations for physical plant changes (new construction or remodeled laboratories). These leaders also may have responsibilities for curriculum development and evaluation. They may be responsible for industrial arts/ technology education programs in a single school building or for a complete school district.

The supply/demand for local industrial arts supervisors varies by state or community. In some cases, the supervisor may be responsible for leadership in other areas within the practical arts (e.g. home economics, business education). This factor often depends on the size of district and the need for mid-level school administrators.

#### State Supervisor

Most states have one or more supervisors for industrial arts/technology education employed by the state department of education. State supervisors have diverse responsibilities in different states. However, most state supervisors responsibilities include curriculum supervision, youth organization supervision, program evaluation, and project contract officer.

The major responsibility for state supervisors is to provide statewide leadership for industrial arts/technology education. Seldom is a state supervisor employed who has not completed a graduate degree and several years of successful

teaching experience. These types of experiences are considered mandatory background for people who will fill state leadership positions.

#### Teacher Educator

The doctorate is considered the terminal degree for teacher educators. It is possible to obtain employment at a university level without the doctorate. Slightly under half of the industrial teacher educators in the U. S. have not completed the doctorate (1984-85). For promotion, tenure and career advancement at the university level, the doctorate is mandatory. Without it, a faculty member will likely not be promoted beyond the associate professor\* level.

University faculty in industrial education are involved in preparing industrial arts/technology education teachers and mid-level managers and technologists for industry. The non-teaching options generally are referred to as "industrial technology" programs. To prepare teachers and technologists, university faculty teach technical courses and/or professional education courses. The faculty is involved with curriculum development, teacher inservice, industrial consulting and so forth. They are expected to be leaders who are on the "cutting edge" of their respective specialties. To accomplish this, they must be involved actively in research, writing, and professional organizations. University teachers also may specialize in research, teaching, advisement and/or curriculum development.

NOTE: There may be additional criteria which must also be fulfilled.

The employment market for the university faculty looks bright for the next ten years. A study by Erekson and Birks (1985) reported a 40% turnover of faculty members in industrial arts/technology education within ten years due to retirement. The projections for replacements did not include estimates of vacancies created due to people leaving higher education for private sector employment, tenure denials or death. Erekson and Birks indicated that there would be almost two university jobs for each doctoral graduate in the next five years.

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APPENDIX I  
 Assistantship Data

NUMBER OF ASSISTANTSHIPS IN INDUSTRIAL  
 EDUCATION FOR GRADUATE STUDY

Source: Industrial Teacher Education Director (1986)  
 Compiler: Dr. John R. Wright

	Masters	Specialist	Doctorate	.25	.50	.75
Alabama A & M University	X	X		1		
Arizona State University	X		X	4	8	
Northern Arizona University	X			2		
University of Arkansas	X			1	1	
California Polytechnic State University	X			5	5	
California State University-Chico	X					
California State University-Los Angeles	X			1	1	
Colorado State University	X		X		15	
Central Connecticut State University	X				5	
University of Connecticut	X		X		2	
University of Delaware	X			1		
Florida A & M University	X			2		
Florida International University	X				2	
The Florida State Univ.-Tallahassee	X	X	X		12	
University of South Florida	X				2	
Georgia Southern College	X	X			1	3
University of Georgia	X	X			2	1
Valdosta State College	X	X			1	
Chicago State University	X				5	
Eastern Illinois University	X			3	2	
Illinois State University	X			5		
Southern Illinois University	X			4	12	
University of Illinois	X	X			2	
Western Illinois University	X		X		7	
Ball State University	X				11	
Indiana State Univ.-Terre Haute	X		X	10	10	14

Indiana State Univ.-Bloomington	X					1
Purdue University	X					6
Iowa State University	X	1				7
University of Northern Iowa	X	1				7
Fort Ways State University	X	2				
Kansas State University	X					1
Pittsburg State University						6
Wichita State University	X					
Eastern Kentucky University		1				3
Morehead State University	X	5				1
Murray State University	X	1				1
University of Louisville	X					1
Western Kentucky University	X					2
Louisiana State University	X					1
Northwestern State University	X					2
University of Maryland	X					4
Fitchburg State College	X	16				
Central Michigan University	X	1				2
Eastern Michigan University	X	18				
Michigan State University	X	4				
Northern Michigan University	X					
Bemidji State University	X	6				
Mankato State University	X	2				
Alcorn State University	X	2				1
Jackson State University	X	4				
Univ. of Southern Mississippi	X	2				
Central Missouri State University	X	3				8
Northeast Missouri State University	X	2				2
Northwest Missouri State University	X	2				
Southeast Missouri State University	X	2				2
University of Missouri	X	2				2
Montana State University	X	2				2
Western Montana College	X	1				

	Masters	Specialist	Doctorate	.25	.50	.75
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Chadron State College	X					2
Kearney State College	X			2		1
University of Nebraska	X					2
Wayne State College	X					2
Glassboro State College	X					2
Montclair State College	X			2		
Rutgers University	X	X				2
Trenton State College	X			3		
Eastern New Mexico University	X					1
New Mexico Highlands University	X					2
University of New Mexico	X					1
New York Univ.-Washington Square	X			3		3
State Univ. College at Oswego	X			2		2
The City Univ. of New York	X			2		
Appalachian State University	X			6		
East Carolina University	X					
North Carolina A & T State University	X			2		1
North Carolina State University	X			7		6
University of North Dakota	X					1
Bowling Green State University	X					16
Kent State University	X					3
The Ohio State University	X					19
The University of Akron	X					5
The University of Toledo	X			2		
Northeastern Oklahoma State University	X					1
Oklahoma State University	X	X				6
Southwestern Oklahoma State University	X					1
Oregon State University	X			1		5
Cheyney State College	X					2
Millersville University of PA	X					
The Pennsylvania State University	X			1		10
Rhode Island College	X					2
East Tennessee State University	X			1		9

	Masters	Specialist	Doctorate	.25	.50	.75
Memphis State University	X				8	
Middle Tennessee State University	X		1		1	1
Tennessee State University	X				4	
Tennessee Technological University	X				1	
The University of Tennessee	X	X	3		1	
East Texas State University	X	X			5	
North Texas State University	X	X	2		1	
Sam Houston State University	X	X	3		2	
Southwest Texas State University	X				2	
Texas A & M University	X	X			19	
Texas A & I University	X		1		1	
Texas Southern University	X		1		1	
University of Houston	X	X	4		2	
Brigham Young University	X		8			
Utah State University	X	X			3	
University of Vermont	X	X			1	
Old Dominion University	X				1	
Virginia Polytechnic & State Univ.	X	X	5		1	
Washington State University	X	X	1		3	
West Virginia University	X	X	5		13	10
Univ. of Wisconsin-Platteville	X		3		6	2
Univ. of Wisconsin-Stout	X	X	11		4	
The University of Alberta	X				2	3
University of New Brunswick	X	X	2			
University of Manitoba	X		12		4	4
<b>TOTALS</b>	<b>110</b>	<b>15</b>	<b>33</b>	<b>158</b>	<b>386</b>	<b>52</b>

\*596 Assistantships were allotted in 1985 by 117 institutions.